WORKSTATION NEWS
MacWEEK

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LATEST

Managers go slow with System 6.0.2

BRIDGEPORT, Conn. — Apple's new System 6.0.2 has reached dealers and on-line services, but corporate micro managers plan to take their time before installing it on their users' machines.

System 6 has had a particularly troubled history, beginning with its ill-fated initial release last May. But most micro managers contacted in an informal sampling last week said

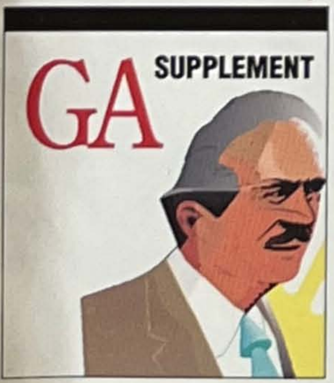
See SYSTEM 6.0.2, Page 9

Blazing speed from Siclone

SUNNYVALE, Calif. — Promising speed increases of up to 350 percent, Siclone Sales and Engineering last week announced the Si3033 accelerator board for the Mac II. The $3,999 board, set to ship in the first quarter of 1989, uses a 33.3-MHz Motorola 68030, a 64-Kbyte instruction cache and the '030's Burst mode memory access. The board far exceeds the speed of the Mac IIx. □

Citibank puts IIs in N.Y.C. branches

NEW YORK — According to sources at both Apple and Citicorp Inc., New York-based Citibank plans to have 300 Mac IIs installed in "a matter of weeks." Branch-based Macs will share information daily with Macs at Citibank headquarters. The bank reportedly has started training branch officers to use a custom database application written in ACIUS' 4th Dimension. □



Apple fuzzy on SCSI

Standards committee demotes Apple

BY RICK BRENNER

CUPERTINO, Calif. — In the latest twist to a long-running saga that has several times left Apple at odds with the keepers of the SCSI standard, the American National Standards Institute committee rewriting the data transfer specification recently removed Apple as an active voting member because the company failed to meet the group's attendance requirements.

John B. Lohmeyer, chairman of the ANSI committee, confirmed that Apple was reduced in August to "observer" status, after two representatives from Apple, a principal and an alternate, failed to heed a letter warning them that repeated absences had put their membership in jeopardy.

Apple's demotion highlights its role as both hero and villain to the SCSI world and raises the question of how closely Apple intends to follow the expanded SCSI-2 specification, on which the committee has been laboring for two years.

On the hero side, Apple's adoption of SCSI in its Mac and Apple IIGS product lines has been the strongest factor in popularizing SCSI. Most IBM PCs use the older and slower ST-506 interface, but even IBM is expected to offer SCSI soon. On the villain side, either by design or disorganization, Apple's engineers have in several cases departed from the current standard in ways that have caused problems for peripheral makers and users.

When the first SCSI Mac, the Plus, was introduced, drive developers had to scramble to make their drives boot up on the new machine The start-up routines in the Mac ROM were not in compliance with the official SCSI standard, known as Revision 17B or ANSI X3.131-1986, and therefore left the Plus unable to respond properly to signals sent by the peripherals.

See SCSI, Page 9

NeXT WEEK

First report: Under the hood

BY RIC FORD

PALO ALTO, Calif. — While Apple's plans for new Macs are shrouded in the kind of secrecy that would do justice to the CIA, NeXT has finally shown its hand, or at least part of it.

Although NeXT machines or technical documentation haven't been released to developers outside the cloister of the company's headquarters here, sufficient information is available to compare its hardware to that of the current Macintosh.

The NeXT Computer System is much like the Mac in many features of its design and packaging. It uses the same Motorola 68000-family architecture, custom VLSI (very large-scale integration) chips and some of the same interfaces to SCSI and serial devices. Like the original Macintosh, the NeXT machine features an elegant board design with a remarkably low parts count for its functionality, making it cheaper to produce and potentially more reliable than other design approaches.

See NEXT, Page 8

Third parties bring DSP to Mac, too

NeXT puts focus on digital signal processing

BY JONATHAN PERROW

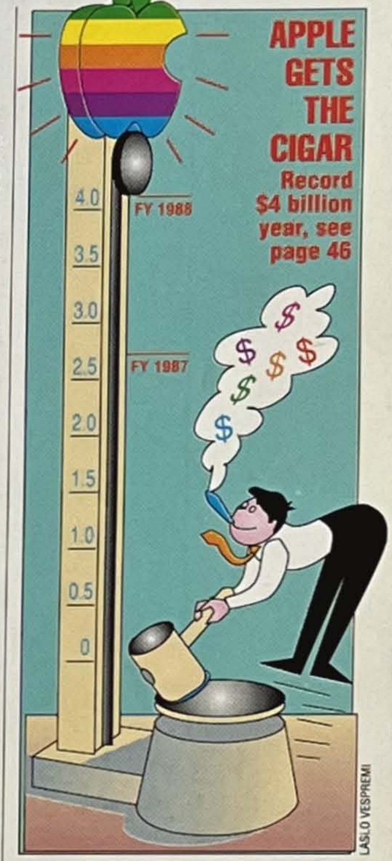
AUSTIN, Texas — From biomedical analysis to recording Stravinsky on a compact disc, digital signal processing technology is paving the way for personal computers — including the Macintosh — to offer CD-quality sound, built-in high-speed modems and other functions that require real-time responses to data input.

Steve Jobs' NeXT Inc. put the spotlight on DSP last week by building the Motorola 56001 DSP chip directly onto the logic board of its forthcoming workstation. Jobs beat Apple to the punch, but there are indications that his former company is also experimenting with DSP. And several DSP-equipped NuBus boards from third parties are already in use on the Mac II.

Besides helping computers play music generated by mathematical equations in real time, a DSP chip like the Motorola 56001 is suited to a range of applications. These include

See DSP, Page 8

Sonic Solutions' Andy Moorer uses SSP board to clean up old recordings.



APPLE GETS THE CIGAR
Record $4 billion year, see page 46

Attendance blues at Dexpo show

BY JON SWARTZ

ANAHEIM, Calif. — Sure, appearances can be deceiving and trade show organizers are sometimes wont to inflate attendance figures, but even those two facts didn't explain the small crowds at Dexpo West 88 here.

"Tell me it's going to get better," said Marc Benioff, Mac team director at a deserted Oracle Corp. booth.

"It's doubtful we'll come back," said another vendor several yards away. "Why should we come when there's no one here?"

Both vendors, ironically, were participants in the Apple/Digital Integration Center, where users — at least in relative terms — were most concentrated.

Expoconsul International Inc., the Princeton, N.J.-based show organizer, estimated a record 15,000 people passed through the turnstiles during the Oct. 18-20 show. Vendors set their guesses

See DEXPO, Page 8

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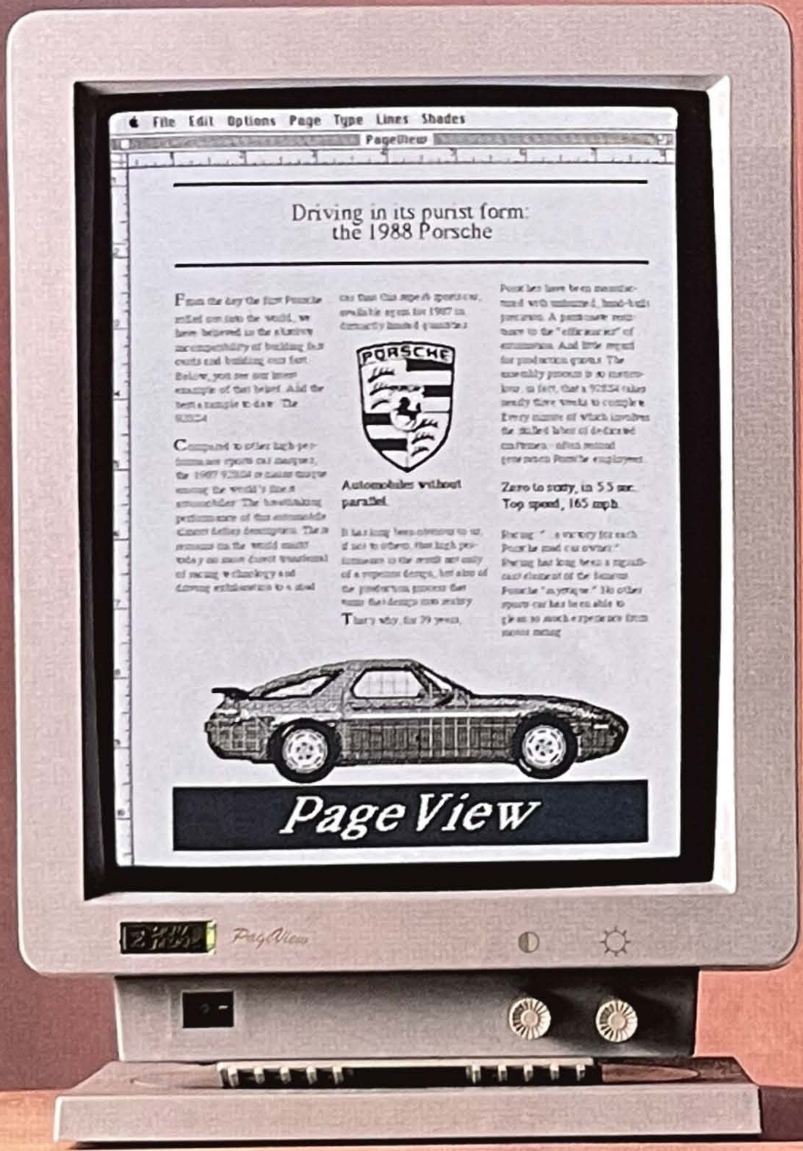
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More suits than jeans at HyperExpo

HyperCard 2.0 a year away

BY ALAN BRODY

BOSTON — Last week's HyperExpo here proved to be an uneven event: Bill Atkinson announced that HyperCard 2.0 would be delayed, the turnout was lower than expected, but corporations were surprisingly well-represented.

Bill Atkinson, whose keynote speech opened the show in the morning, was unable to appear at an afternoon "Blue Skies" session. Instead, Mitch Kapor, founder of Lotus Development Corp. and now of On Technologies, read from Atkinson's notes that Version 2.0 of HyperCard would be ready "about a year from now."

In other comments, Atkinson appeared to endorse Steve Jobs' NeXT machine. Stating that the current Mac desktop "doesn't look like a desktop [but] like a bunch of line drawings," Atkinson, through Kapor, said he would like to see "realism on a mass scale." NeXT "will set a standard" that others will have to match or "be seen as lacking," he said.

With a crowd estimated at 1,300 by American Expositions, the show organizers, attendance fell below the 2,000 recorded at the June show in San Francisco. But the missing home users were replaced by people from corporations like Citibank and Jet Propulsion Lab as well as visitors from as far away as Italy.

"I had mixed feelings about it," said Tom Tafuto from Applied Imagination of New York, who was on hand to debut Imaginator, a $74.95 story boarding/authoring stackware environment, and Contacts, a personal database-management stack. "From a business point of view it was disappointing. From a networking point of view it was excellent."

The conferences featured hypermedia notables from the Mac, DOS and workstation worlds, including speakers from Xanadu, Sun, Symbolics, OWL International and Apple. Many were pioneers, bearing real or imagined arrows in their backs, anxious to remind people of their unrecognized contributions to the emergence of hypertext. Paul Heckel of QuickView spoke about his card-and-rack metaphor as being better than HyperCard's card-and-stack approach and said that HyperRacks, a Mac version of his ZoomRacks program, would appear soon.

While the conferences were lively and well-attended, the show floor seemed weak by comparison. Big players such as Apple, Mediagenic's TENpoint0, Hyperpress, Heizer Software and author Danny Goodman did not appear. Most of the approximately 40 vendors, universities, users groups and private developers took tables with modest trimmings. Attendees got a good look and feel of the uncarpeted concrete floor in the small corner of Boston's World Trade Center that the show occupied.

One recurring lament was that the full show/conference price of $50 was too high to attract "stackheads." Along with lack of local promotion, the price seems to have kept many home-brew enthusiasts away.

Among new products displayed was UNIX in a Nutshell, a $49.95 HyperCard-based UNIX reference stack from O'Reilly & Associates of Newton, Mass. A release due in 1989 will be a true HyperCard front end to UNIX, the company said.

High Performance Software of Lyme, N.H., demonstrated a HyperCard interface to Stella for Business, the company's $350 systems-modeling/simulation program. Millenium Software of Laguna Beach, Calif., showed the $49.95 released version of its previously shareware expert system, HyperX.

HENRY HILLIARD/PICTURE GROUP

Mitch Kapor stood in for Bill Atkinson at the "Blue Skies" session.

Eastgate Systems of Watertown, Mass., offered a challenge to HyperCard with HyperText Development System, a $200 multiwindowing hypertext environment. Eastgate also demonstrated 1912, a $49.95 presidential election simulation.

Developer George Escobar demonstrated Writers Workshop, a HyperCard-based screen-writer training guide and specialized word processor. The program, published by American Film Institute of Los Angeles, uses quotes from famous directors and authors to help writers identify a film genre and map out their characters and plots while producing a standard-format script. Slated for release in 1989, it will cost $295.

Other crowd-pleasers included OWL International of Bellevue, Wash., which showed hypertext files built with its Guide software on both the Mac and the IBM PC, and Scenario Inc. of Somerville, Mass., which sells a $4,995 portable AT-based CD-ROM delivery unit called DynaBook. Scenario is not affiliated with Apple or Alan Kay, but a company official said, "The name had never been trademarked before."

The top attraction of the show, several attendees said, was HyperAnimator from Bright Star Technology of Bellevue, Wash. The $149.95 animation program wowed audiences with its customizable talking interface. Noting that BrightStar's technology is protected by copyrights and patents, William Correll, director of marketing, said that Apple's proposed Knowledge Navigator will "definitely need this." □

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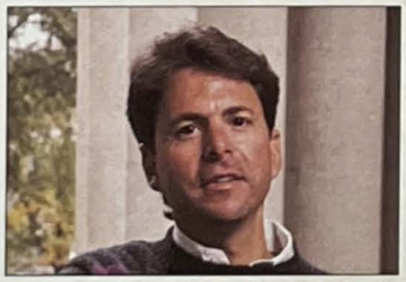

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MacWEEK is produced using an in-house system of: Apple Macintosh SEs and Mac IIs; LaserWriter, Varityper VT-600 and QMS ColorScript 100 printers; a Linotronic 300; an Abaton Scanner; RasterOps, E-Machines and SuperMac monitors; Quark XPress, PageMaker, Adobe Illustrator, Aldus FreeHand, SuperPaint, Microsoft Word, LaserPaint, PixelPaint and Cricket Draw software.

Microsoft upgrades Works, File

Excel upgrade for IIx planned

REDMOND. Wash. — Microsoft Works 2.0, a major enhancement of the popular $295 integrated program, began shipping last week, complete with spelling checker, macro recorder, a HyperCard training stack and a host of other new features.

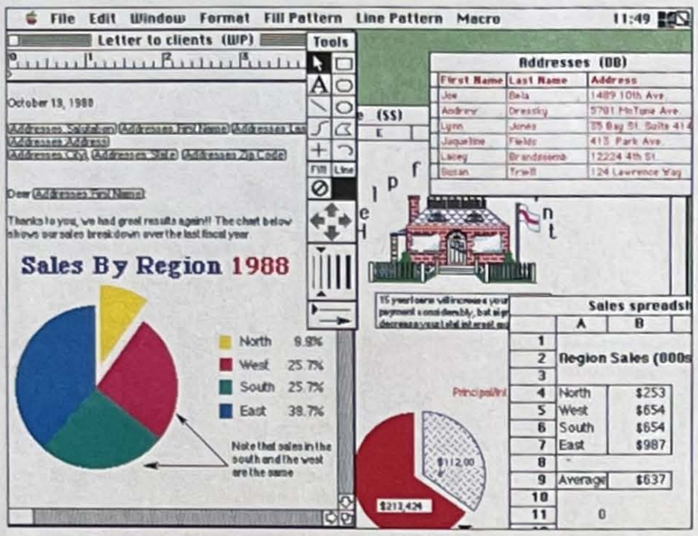
The program, which combines word processing, spreadsheet, database and telecommunications functions, now supports eight screen colors and includes a drawing palette that product manager Brad Chase called "a superset of the original MacDraw." A Print Preview feature and new label-printing options have been added, and performance has been improved significantly, Chase said.

Upgrades to Works 2.0 are $75.

The company also delivered Version 2.0 of Microsoft File, giving the 3-year-old flat-file database program faster performance, color support, better mail-merge links to Word, and a collection of 120 pre-designed templates. Upgrades to the $195 program will cost $50.

Microsoft acknowledged that Excel 1.5 does not take advantage of the Mac IIx's math coprocessor under System 6.0.2. The company blamed Apple for the problem but said it will provide a free upgrade for IIx owners.

Microsoft Corp. is at 16011 N.E. 36th Way, Box 97017, Redmond, Wash. 98073-9717; (206) 882-8080. □



October 19, 1988

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Lynn	Jones	35 Bay St. Suite 414
Jaqueline	Fields	413 Park Ave.
Lesley	Brandsomb	12224 4th St.
Susan	Trell	124 Lawrence Way

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2	Region Sales (000s	
3		
4	North	$253
5	West	$654
6	South	$654
7	East	$987
8		
9	Average	$637
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Works 2.0 now offers color and a palette of drawing tools.

Sony flopticals ready for OEMs

BY CLAIR WHITMER

PARK RIDGE, N.J. — As a rejoinder to last week's unveiling of the Canon rewritable magneto-optic disk that will be used in NeXT Inc.'s forthcoming workstation, Sony Corp. this week announced that its magneto-optic ("floptical") drives are available now to OEMs and workstation manufacturers.

The Park Ridge, N.J., company has not announced any deals with system builders, but a company representative implied that such agreements would be coming soon.

Sony has traditionally supplied floppy disk drives to Apple.

Sony's drives were announced several months ago, but weren't commercially available until now. The company is selling two drives, the SMO-S501 for external use and the SMO-D501, which is designed to be easily adapted as an internal device.

The excitement surrounding the NeXT machine is undoubtedly prompting careful examination by NeXT competitors of all its innovative components. The Sony announcement appears intended to remind manufacturers that Canon is not the only supplier of erasable optical storage systems.

The basic technology used in the Sony drive is quite different from the Canon offering.

"It's not as pretty as the NeXT drive," said Sony representative Steve Burke, referring to the attention NeXT has been getting.

Both of Sony's drives are based on its own rewritable optical technology, which provides a single-cartridge capacity of 650 Mbytes, seek times of 20 milliseconds and a rotational speed of 2,400 rpm.

Sony representatives stress that its media conform with proposed American National Standards Institute and International Standards Organization formatting standards. Hewlett-Packard and 3M Co. have also announced support for these standards, which are designed to ensure that disks will be usable on drives from all manufacturers, as is true with most magnetic media.

The Canon drive, in contrast, depends on a proprietary technology that involves continuous multilayered processing of data on the disks. As a result, the drives have a somewhat lower capacity: NeXT will use a 256-Mbyte disk version, although Canon is also offering a 512-Mbyte disk. Canon, however, promises a higher rotational speed, 3,000 rpm, which it said means faster access to data. Only Canon-manufactured drives can read such cartridges.

The Sony drive carries an OEM price of $4,650, while the Canon OEM price is listed at $6,000. Cartridges are priced at $250 and $200, respectively.

Sony Corp. of America is at Sony Drive, Park Ridge, N.J. 07656; (201) 930-7669. □

VersaTerm upgrades announced

BY EMILY BROWER

READING, Pa. — Abelbeck Software has announced the upcoming release of new versions of VersaTerm and VersaTerm-PRO, popular high-end telecommunications and terminal-emulation software.

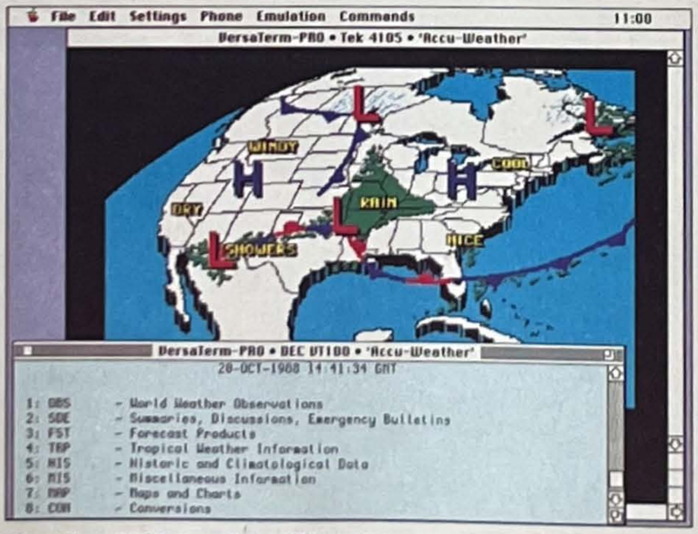
Developed by Abelbeck Software, the programs are marketed by the Synergy Software division of Peripherals Computers & Supplies Inc. here.

The new versions will ship this fall with rewritten and updated manuals and several new features. Among them is support for functions driven by the host computer rather than simple terminal emulation on the Macintosh, said Diana Abelbeck from Abelbeck's technical support group.

Both new releases, VersaTerm 4.0 and VersaTerm-PRO 3.0, allow users to create command macros that can be executed by the host computer. For example, macros can be programmed to send files and data at specific times. The new versions also include Text Translation, a feature that changes commas within a text file to tabs while the file is being transferred, as well as an integrated text editor, hierarchical menus and support for the ImageWriter LQ.

VersaTerm-PRO 3.0 will sell for $295 and VersaTerm 4.0 will sell for $149. Upgrades for current owners will be available for $20.

Peripherals Computers & Supplies Inc. is located at 2457 Perkiomen Ave., Reading, Pa. 19606; (215) 779-0522. □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2: SDE      - Summaries, Discussions, Emergency Bulletins
3: FST      - Forecast Products
4: TRP      - Tropical Weather Information
5: HIS      - Historic and Climatological Data
6: MIS      - Miscellaneous Information
7: MAP      - Maps and Charts
8: CON      - Conversions
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VersaTerm-PRO 3.0 emulates DEC and Tektronix terminals.

Apple to provide toolbox for telecom applications

BY EMILY BROWER

CUPERTINO, Calif. — Communications on the Macintosh has never been what it should or could be, but some major improvements are in sight, according to sources at Apple.

As one Apple programmer put it, "Everyone at Apple knows that communications on the Macintosh is a mess." The Macintosh II, even with six slots, cannot support an internal modem, which is routine technology for IBM PCs and PC clones. And support for multiple serial ports, or serial ports other than the modem and printer ports, is also missing from the Macintosh operating system.

"Management for multiple serial ports is something that has been a real problem," said Scott Watson, author of Red Ryder, a popular telecommunications program from FreeSoft Inc. of Beaver Falls, Pa.

But by next year, telecommunications developers will get a new set of tools called the Macintosh Communications Toolbox for cleaning up the mess, according to several sources.

"The toolbox is extremely important for communications development, and we plan to take advantage of it as soon as it becomes available," said Dan Schwinn, president of Shiva Corp. of Cambridge, Mass.

The toolbox offers developers "overall comprehensive communications architecture" for better implementation of communications functions such as file transfers, data connection and terminal emulation, according to a source at Apple.

The toolbox interacts with the Mac OS and application software on two levels, according to the source. On one level reside the toolbox managers — the Terminal Manager, the Connection Manager or the File Transfer Manager. These managers, written into an application by the developer, access new resources or tools in the System folder.

These tools will be installed in the System folder by the user with a new communications resource mover, which will resemble Apple's Font/DA Mover.

"We are extending the Font/DA Mover paradigm to communications," the source said.

Apple will ship the toolbox to developers with some resources, such as VT100 and TTY terminal emulations and telecommunications parameters, according to the source. Applications written or modified by developers to take advantage of the new managers will be able to access these resources once they are installed in the System folder.

For example, telecommunications software that incorporates the toolbox would show a standard dialog box with pop-up menus for setting baud rates, parity and stop bits. It would also show pop-up menus for choosing file-transfer protocols, such as MacBinary or X-Modem.

The toolbox also clears the way for easier development and implementation of new emulations and file-transfer protocols. Using the toolbox, a hardware manufacturer could develop a terminal-emulation resource that could be installed into a user's system and accessed from any telecommunications program that uses the toolbox's terminal manager, explained the source.

"The toolbox lowers the threshold for communications. People with innovative ideas in communications will be able to develop them more easily," said Dennis Brothers, a telecommunications developer.

According to the documentation from the Apple/DEC Developers Conference held in Boston in August, one of the intended functions of the toolbox is to "standardize user interface to communications services."

"Access to some telecommunications parameters will be standard for Mac users in the same way that some word processing functions are standard across applications," said David Chase, president of Epic Technologies Inc. of Fremont, Calif.

But some developers disagree with the notion of a standard look for telecommunications on the Macintosh. "Communications software applications will continue to look different. If you ask [if it] will result in better communications, I'd say yes, but [as to] a uniform telecommunications paradigm, I would question that," said David Hindawi, president of Software Ventures of Berkeley, Calif.

Still, Hindawi said his telecommunications program, MicroPhone, will take advantage of the toolbox as soon as it is made available. □

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Destined for presentations

MORE II suited to new genre

BY SCOTT BEAMER

REAL SOON

Looking back over the history of MORE from Symantec of Cupertino, Calif., it seems to have been a product perpetually ahead of its time. The initial release, billed as a planner and outliner, was available long before the Macintosh was selling to businesses. The next major release had full-color capabilities on the Mac II, but there were no color input or output devices at the time. With its latest version, however, MORE seems to finally have a market ready and waiting.

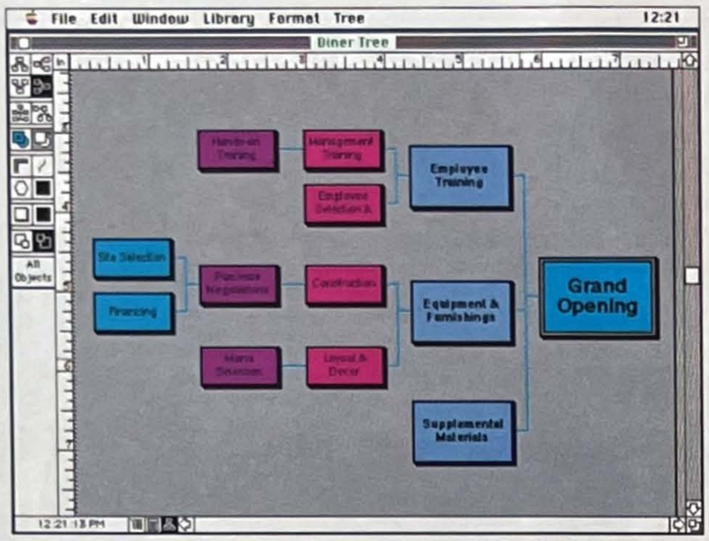
The soon-to-be-released MORE II is well-suited to the Mac world's favorite new genre: desktop presentations. Through a refinement of existing features and with a clearer target market, MORE II is poised to make a splash in a pond already crowded with big fish. In fact, what seemed like a rather dissonant mixture of features before makes such good sense now that one wonders if MORE was headed here all along.

Software vegematic. Apparently Symantec has always felt that "more is better" when it came to adding features. While some of MORE's capabilities, like the phone dialer and the Calculate Now function, may not seem completely appropriate in a presentation product, the outliner — with its bullet charts, tree charts, ability to mix in graphics, and slide-show effects — contains a comfortable blend of useful features.

Probably the most powerful new feature in MORE II is Rules, which Symantec describes as "smart style sheets." These allow you to set up a formatting template for any part of your work. Rules, which can include color, can be attached to different levels of an outline and to different views, such as bullet charts or tree charts.

The word processing features in MORE II are actually improvements on some earlier shortcomings. Headlines can now accommodate 32 Kbytes of text, which wraps onto multiple lines and can contain multiple fonts, sizes and styles. Page breaks can be inserted into an outline, and Microlytics' 100,000 word SpellFinder spelling checker has been added.

MORE II's new slide-show effects are outstanding. We predict that many will buy it for these features alone. Slide shows are a natural for computer-based demonstrations. Wherever your audience can see a Macintosh screen, you can employ a wide range of full-color effects, including wipes, fades and dissolves. The built-in timer means that you can even leave your presentation running unattended. Now that's productivity!



Tree charts are among the MORE II features useful for presentations.

Picture perfect? While no product has a stronger background for presentations than MORE, some curious weaknesses remain, especially in graphics manipulation. MORE's object-oriented graphics tools are fairly simple by graphics application standards. Any art beyond shadow boxes and circles should be created elsewhere and imported. Unfortunately, imported graphics can be resized but not cropped, and graphics can only be viewed in the bullet chart view or preview mode.

Also surprising is MORE's inability to create business graphics, such as pie charts, although this may not be as big a detriment as it appears to be. Presumably, a large overlap exists between those desiring business graphics in their presentations and those who already own a spreadsheet with which to create them.

Any specific capabilities that MORE lacks are offset by its excellent import and export facilities for both graphics and text. By allowing users to take advantage of work done almost anywhere else, MORE provides an adaptable environment for both organization and presentation. And as with previous versions, a wide range of tutorials, examples and templates are provided with the program, including a library of graphics.

Among the most important export facilities is the ability to send documents to a slide maker or slide bureau for creation of 35mm slides and overhead transparencies. While MORE II supports a host of slide-making peripherals, Symantec has also announced an arrangement with Elmsford, N.Y.-based MAGI-Corp that will allow MORE documents sent by modem or courier to be returned as slides or overheads the next day.

Missing from the MORE II package will be Acta, the desk accessory outliner from Symmetry Corp. of Mesa, Ariz. Its presence in the previous version was something of an incongruity since MORE claimed to be the best outliner available on the Mac. The combination made a lot of sense, however, if you wanted to refer to an outline while working in another application. But with a stand-alone version of Acta announced for this fall, the two companies apparently chose to pursue their interests separately.

The big bandwagon. Competition in this market is tough. MORE's biggest advantages in the presentation market will be its large customer base and unique blend of features. Owners of earlier versions will be able to move into presentations at a bargain price. The upgrade from Version 1.1 to MORE II is $89 compared with the list price of $395.

Not satisfied with keeping its loyal user base, Symantec is attempting to lure dissatisfied users of competing products by offering the same $89 price for MORE II to anyone sending in the title page from the manual of Cricket Presents..., StandOut! or PowerPoint. New customers who are still tentative about desktop presentations in general can try out MORE II under a 30-day money-back guarantee.

Although the marketing pitches for desktop presentations will most likely continue to be aimed at the mid-level executive, we expect to see material prepared with presentation software in an increasingly wide range of locations. The increased impact and credibility of a good presentation are just as important in classrooms, lecture halls, convention sites, courtrooms and religious centers as they are in board rooms. On the strength of its outlining and planning capabilities and its new presentation features, MORE II should be a strong contender in this wider desktop presentations market.

Symantec is located at 10201 Torre Ave., Cupertino, Calif. 95014; (408) 253-9600. ☐

VideoShow systems ported to Mac

BY CONNIE GUGLIELMO

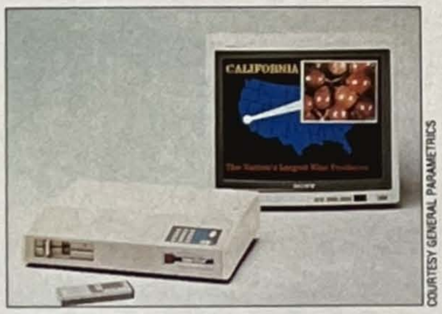
BERKELEY, Calif. — General Parametrics is developing Macintosh versions of its portable color presentation systems and low-cost desktop film recorder for release in the first quarter of 1989.

Three VideoShow systems are under development, including the popular $8,995 VideoShow Professional, according to a spokesman for the Berkeley, Calif., company. More than 20,000 VideoShow systems have been sold for the IBM PC since the publicly held company introduced the product in 1984.

General Parametrics is also readying a Mac version of its PhotoMetric SlideMaker. Priced at $4,495, the PhotoMetric creates 35mm color slides with a resolution of 4,000 lines. Slides can be created using images taken off the Mac or the VideoShow systems.

A stand-alone device that hooks up to any color monitor or video-projection system, VideoShow Professional will display Mac-generated presentations much the way 35mm slides are displayed using a slide projector. VideoShow's wireless remote controller lets users advance or return to a previous image as well as go directly to a particular image using the numeric keyboard.

The remote control also lets users move an electronic pointer on screen, overlay images, highlight text and incorporate transitions between slides. VideoShow Professional contains 100 transitional effects. Although the hardware selects the transitions at random, users can override the hardware and specify transitions when creating the presentation.



COURTESY GENERAL PARAMETRICS

VideoShow Professional's display capabilities will soon be available on the Mac.

Presentations can be created using any Mac presentation package. The Mac file must then be converted into VideoShow format using a conversion and file-compression utility supplied by General Parametrics. All VideoShow systems support an industry-standard file format, the North American Presentation Level Protocol Syntax.

VideoShow Professional displays images on any red-green-blue monitor using up to 100,000 colors. The device also has built-in genlock capabilities, allowing users to connect to any video device for importing and exporting images.

Two other systems under development include VideoShow Executive, a lighter-weight version of the Professional model, designed to fit in a briefcase, and VideoShow Companion, which will allow users to colorize images created on a Mac SE.

General Parametrics Corp. is located at 1250 Ninth St., Berkeley, Calif. 94710; (415) 524-3950. ☐

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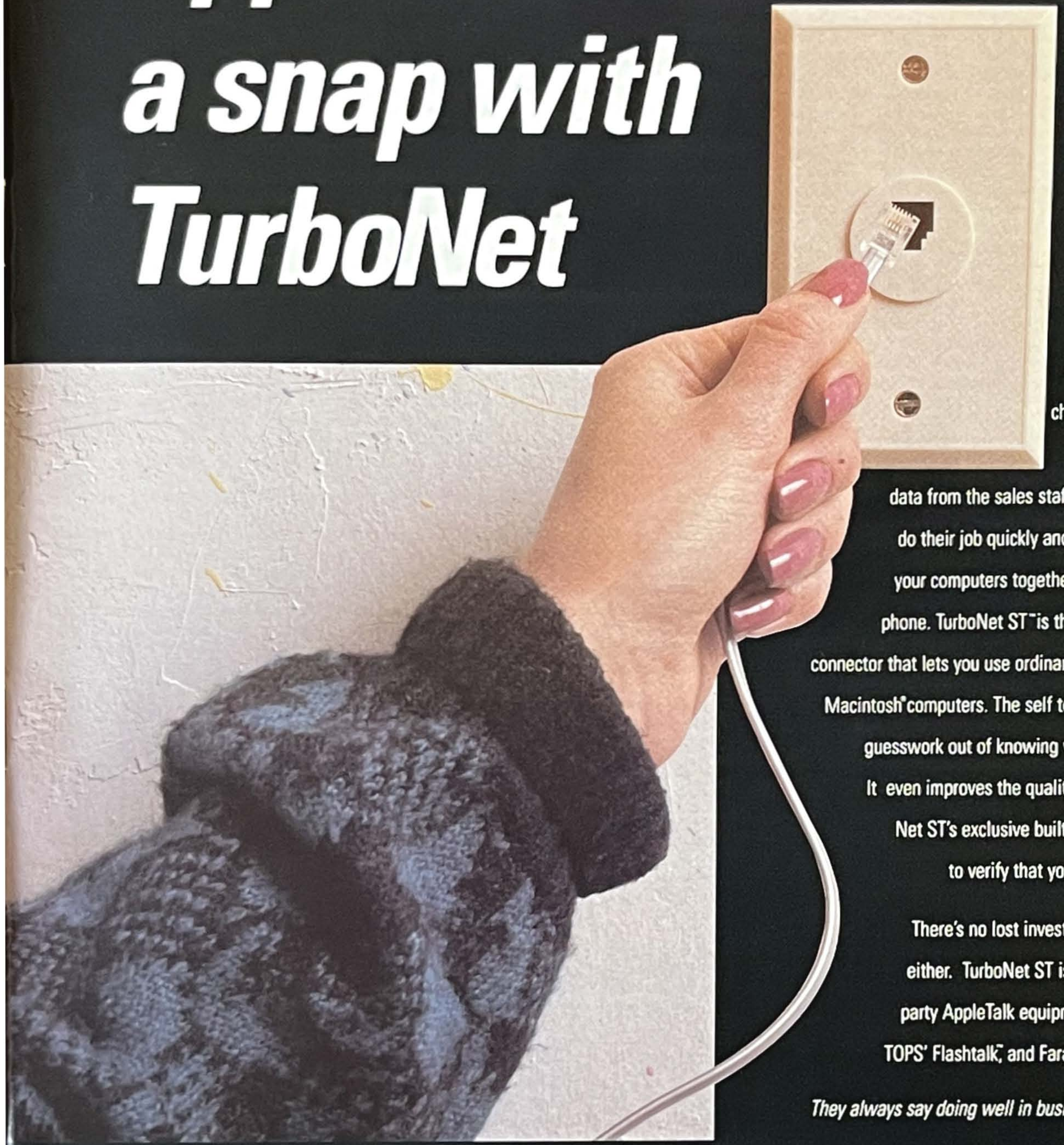
BPA

AppleTalk networks are a snap with TurboNet



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NEXT

Continued from Page 1

Modern surface-mount technology and low-power CMOS components are prominent in the design, and the integration of its individual components on a single board is very impressive. Where the NeXT computer starts to leave its Mac ancestors behind is not in hardware design philosophy or in basic technology, but in raw power. It is higher on the technology curve than the Mac IIx and closer to what personal computers will be like in the future.

The hardware of a computer platform is basically composed of high-speed storage (RAM and ROM) and the three P's: processors, peripherals and pathways.

NeXT's hardware begins with a heftier collection of RAM chips than even the new Mac IIx provides. Eight Mbytes of fast dynamic RAM are standard, with extra SIMM slots on the motherboard for an additional 4 or 8 Mbytes.

For a powerful multitasking system like NeXT's Mach/UNIX-based software, it's important to have plenty of memory to keep the operating system from going to disk too frequently and degrading performance.

DRAM alone is not all there is to memory. Video RAM, buffers and caches, and ROM all contribute to the power equation. NeXT has substantial chunks of high-speed static RAM in key places: at the digital signal-processor chip and at the optical drive controller.

Crucial to the power of the system are tiny high-speed buffers in the custom VLSI chip (the "ICP") that manages the flow of data through the machine's 12 direct-memory access channels. These DMA channels, which are very fast but rather dumb, take a large burden off the main 68030 processor. They basically handle all the dirty work of moving data between memory and external devices such as disk drives, printers, video displays and networks. There is no equivalent feature on the Macintosh and as a result, its main processor gets tied up with these chores and the user ends up waiting.

The computer has 256 Kbytes of video RAM to support NeXT's 17-inch monitor, which displays 1,120 by 822 pixels at 94 dpi. There appears to be no provision on the motherboard for extra video RAM to support more gray scales or color, and future video expansion will probably take place on a separate logic board that could house graphics processors as well.

Optical boot. ROM plays a smaller role in the NeXT machine than it does in the Mac. With the NeXT Computer System, the user interface and other operating system software modules are all contained on start-up optical disks. A 64-Kbyte ROM provides the basics necessary for "bootstrapping" the system and storage devices into consciousness when the power is turned on.

A real innovation comes in NeXT's custom VLSI chip that controls the Canon optical drive. The optical storage processor (OSP) provides the sophisticated hardware management and optimization necessary to make the new 256-Mbyte optical technology practical.

The NeXT design has ample processing power in a design that is more of an extension of the Macintosh approach than a break with it. Neither computer currently offers a dedicated graphics processor. The same Motorola 68030 CPU and 68882 math chip used in the Mac IIx are used in the NeXT box, but NeXT gets more power from a higher clock rate — 25 MHz instead of the Mac II's 15.6672 MHz.

Along with the 68882 floating-point math chip, the NeXT computer brings another powerful processor to the game, Motorola's 56001 Digital Signal Processing chip, which is optimized for such tasks as array processing, sound manipulation and high-speed communications (see related story, Page 1). Finally, there are specialized processors for controlling NeXT's disk devices. An NCR 53C90 is compatible with the Mac's NCR 5380 SCSI control chip but provides higher transfer rates.

NeXT's box uses the same 8530 serial communications chip used by Apple in the Mac, so serial ports are compatible. It appears that the musical instrument digital interface will be implemented in the same way, through the external MIDI adapters now available for the Mac.

NeXT boasts the first 32-bit Ethernet controller, which should help performance by moving data around in bigger chunks in the computer.

Pathways are what tie all the subsystems together in a computer. If you have slow buses, you have a slow computer. Again, the engineers from NeXT have built in the power needed to keep out of bottlenecks.

NeXT kept the basic protocols of the NuBus but redefined the standard 10-MHz clock rate to a hot 25 MHz and switched to CMOS circuit technology. Since you can't use standard NuBus chip sets from Texas Instruments to support a nonstandard bus, NeXT created its own custom NuBus interface chip, which is supposed to be made available to developers sometime soon for $25. The plan would save developers time and money, while providing optimal performance characteristics.

The NeXT bus has three connectors on it in addition to the slot for the single motherboard. When the time comes to add a graphics board or multiple processors, the backbone's speed will be very important.

Other pathways inside the single-board computer are managed by NeXT's custom ICP chip. According to the company, the ICP makes significant improvements in throughput by buffering data at various points and then efficiently moving large chunks at a time. The 68030's special Burst mode is used to speed reading from RAM memory, another fine point missing from the Macintosh design.

Overall, the NeXT Computer System is not much different in design from Mac architecture, but it is more complete and tuned for high performance. It could serve as a good model for future Mac systems.

The NeXT system's software is a little fuzzier at this time, and its performance will be crucial in determining how well the system as a whole competes with the Mac and other workstations. □

DSP

Continued from Page 1

controlling fax machines and modems, voice mail, data acquisition, PBX switching, array processing and sound editing.

"In just a few years, all new personal computers will have to have sound capabilities, voice mail and a 9,600-baud modem built right in," said Bryant Wilder, operations manager for DSP at Motorola.

A 9,600-baud V.32 modem for the NeXT machine has already been completed, Wilder said, but he declined to comment on the company that designed the modem or when it might be released.

One source close to Apple said that the Cupertino, Calif., company is doing "a lot of research on DSP," and "Apple has already designed a prototype Mac II using a DSP chip."

The power of a digital signal processor lies in its ability to handle rapidly changing digital data, according to Wilder. "There's nothing better [than the DSP56001] at capturing this data and manipulating it to elicit real-time response," he said.

Incoming analog signals, whether from a modem, record player or other analog device, must first be run through analog-to-digital converters before being filtered or otherwise manipulated by the DSP. Once output, the data can be converted back to analog signals. An optional C-language compiler for the DSP56001, available from Motorola, lets developers address the chip through a high-level language.

Shipping since March 1987, the DSP56001 is built around a 24-bit fixed-point architecture that includes two serial inputs and a parallel host interface. The chip is available in single quantities for $56. Unlike the 68000 family of microprocessors, the DSP chip uses these I/O channels simultaneously to receive and output data at the same time as other data is being processed.

Other DSP chips on the market include the TI 320 family from Texas Instruments and the WE DSP32 from AT&T, the only floating-point DSP architecture available. A floating-point DSP chip is harder and more expensive to develop but should be easier to program and offers increased dynamic range, ensuring greater accuracy for algorithms, industry sources said.

Spectral Innovations of Sunnyvale, Calif., uses the AT&T chip in its MacDSP NuBus board, which has been shipping since September and is being used in robotics, biomedical imaging and graphics applications, according to the company.

By emulating some of Apple's QuickDraw screen-drawing routines on the DSP chip, MacDSP has "the fastest screen graphics on the Mac II," according to Bryan Finkel, vice president of Spectral Innovations. Apple has even asked the company to show the board at the Siggraph show in August because of its graphics speed, Finkel said.

The MacDSP ranges in price from $2,249 for an 8-Mflops version to more than $3,900 for a 24-Mflops version scheduled to ship in December. Finkel said a 16-bit digital-to-analog and analog-to-digital converter board, application software and a C compiler are available.

The AT&T DSP32 chip combines floating-point processing power with DSP technology, giving it greater graphics capabilities than its competitors, but floating point costs more than a fixed-point architecture, Finkel said. Prices for the chip range from $170 for the 250-nanosecond version to $400 for the 80-nanosecond version. Motorola has promised a second-generation DSP chip, the 96002, with floating-point architecture, but it isn't due to be released until the summer of 1989.

Sonic Solutions of San Francisco is using the Motorola DSP56001 and a Mac II to clean up recordings of Stravinsky, Duke Ellington and the Grateful Dead, among others. Four DSP56001 chips on the company's SSP NuBus board filter clicks, pops and hisses from vintage audio tapes, preparing them for compact disc recording. Two of the Mac II-based systems have been installed at MCA headquarters in Los Angeles.

"We didn't need floating point," said Andy Moorer, vice president of development for Sonic Solutions.

"We looked at the AT&T and the TI 320 family and decided the 56001 had more horsepower for sound, not necessarily for video," said Peter Gotcher, president of Digidesign, a Menlo Park, Calif., producer of software and hardware for digital-audio analysis and editing products for applications such as voice recognition and speech synthesis.

Digidesign is shipping the $1,295 Sound Accelerator board, which uses a hardware configuration similar to the NeXT machine's sound setup, with the same amount of static RAM, two channels of D/A convertors and a DSP expansion port, Gotcher said.

An external stereo 16-bit A/D converter box called the Ad In box is available for an additional $995 to provide a way to import analog signals into the board. Softsynth, a real-time music-synthesis program is included with the Sound Accelerator.

Southworth Music Systems Inc. of Harvard, Mass., is preparing to ship its Max Audio analog card, a $1,400 board with two Motorola DSP56001 chips running at 30 MHz, built-in A/D and D/A converters, a stereo digital audio interface and static RAM. A Mac II version of the card will be shipping shortly, and an SE board will follow about the first of the year, according to Bill Southworth, president of the company.

Spectral Innovations is at 292 Gibralter Drive, Suite A4, Sunnyvale, Calif. 94089; (408) 734-1314. Sonic Solutions is at 6115 California St., San Francisco, Calif. 94121; (415) 751-8666. Digidesign is at 1360 Willow Road, Menlo Park, Calif. 94025; (415) 327-8811. Southworth Music Systems is at 91 Ann Lee Road, Harvard, Mass. 01451; (508) 772-9471. □

BOB RINA

DEXPO

Continued from Page 1

at less than half of that total.

Those who did attend, however, were more knowledgeable than they were a year ago, according to Scott Darling, marketing vice president of White Pine Software Inc. of Amherst, N.H. "Last year users wanted to know how to hook up a system. Now they're weighing the options of running different applications."

The paucity of people didn't dissuade third-party DEC developers from showing their wares. In Macintosh-related product news:

- Apple subsidiary Network Innovations announced the support from two more applications for CL/1, its high-level connectivity language. The Cupertino, Calif., company said CL/1 has been incorporated into Executive Query Tool, a host database access program developed by Applications Design Inc. of Los Gatos, Calif., and Archie, an optical archival system from Soft-Core Creative Technology of Brussels, Belgium.
- Walker, Richer & Quinn Inc. of Seattle unveiled VT320 software for the Mac. Reflection 2 for the Macintosh, priced at $179, allows Macs to act as DEC 320 terminals on DEC mainframes and run such VAX applications as ALL-IN-1, DEC's office automation program, and 20/20, a widely used spreadsheet program from Access Technology Inc. of South Natick, Mass. According to John Vanderwall, WRQ Mac product manager, Reflection 2 is set to ship in the first quarter of 1989.
- Alisa Systems Inc. rolled out an enhanced version of AlisaTalk, its AppleTalk Filing Protocol-compatible file server for DEC VAX/VMS computer systems, and disclosed plans for electronic-mail services.

According to the Pasadena, Calif., company, AlisaTalk 3.2 supports DEC's VMS 5.0 operating system, incorporates all the new features of AppleShare 2.0 and provides Mac-to-VAX remote print management. Prices for AlisaTalk 3.2, which is scheduled to ship Oct. 31, will range from $4,700 to $21,500.

The company also announced two services, AlisaMail and Information Switch, that will let users of future versions of Microsoft Mail on Macs and IBM PCs exchange mail and attached documents with DEC VAX/VMS Mail and DEC ALL-IN-1 users. Alisa expects to have both services available shortly after Microsoft releases Version 2.0 of its mail system. Prices for the Alisa products were not released.

Scattered throughout the sprawling Disneyland Hotel expo site were HyperCard kiosks pointing visitors toward Mac products. □

SCSI

Continued from Page 1

Apple did not correct that problem, sources said, until the release of the platinum Plus in 1987.

Apple's computers also use a 25-pin SCSI connector, which, though not in direct violation of the ANSI regulations, is not among its recommended options. And Apple disregards a section of the standard that requires that the SCSI port provide power to the terminator resistors on peripherals.

This year, Apple provoked confusion and frustration when buyers of the new high-end LaserWriter IINTX printer discovered that the printer's SCSI port, designed to support hard disks dedicated to storing downloadable laser fonts, does not work with many popular third-party drives, including the widely used 30- and 60-Mbyte DataFrame XP drives from SuperMac Technology of Mountain View, Calif.

Harlan Andrews, Apple's principal voting member on the ANSI committee, said he couldn't attend the bimonthly meetings because he was out of the country. "Besides," said Andrews, "three of the meetings I attended were nothing but connector wars," a reference to the ongoing debate among connector vendors on the committee about changing standard SCSI connectors.

Lohmeyer said he agreed with Andrews' charge and supported a motion at the latest meeting to table discussion of connectors "until someone can prove that there's something wrong with the one we've got."

But Lohmeyer and other committee members clearly would like to see "a more focused participation on the committee from Apple." With IBM, DEC and other industry giants attending regularly, Apple is the only major computer company not represented among the 79 voting members, Lohmeyer said.

"They play such an important role in the world of SCSI that it's hard to understand why they don't have a more active role in what we're doing," he said.

Lohmeyer, a senior engineer at NCR Corp. of Wichita, Kan., attributed the problem to "Apple not having a specific person responsible for SCSI implementation." An Apple engineer who wished to remain unidentified confirmed that the Apple group that implemented SCSI on the Mac Plus didn't even consult with the company's members on the SCSI committee. The same thing occurred with the SCSI implementation on the LaserWriter IINTX.

To Apple's credit, the company's engineers have been forthright in documenting their problems with SCSI. Macintosh Technical Notes #96, written primarily for developers but widely available on electronic bulletin boards, documents every SCSI problem Apple is aware of, from Oct. 1, 1986, when the note was first written, to March 1, 1988, the latest update. The bulletin advises developers how to work around the SCSI bugs and even talks about bugs that Apple hasn't solved.

SCSI-2, which is expected to be published in early 1989, adds significant extensions to the current SCSI command set. The most important of these, "command queuing," should improve SCSI performance in a multi-user environment. SCSI-2 also offers an option for expanding from the current eight-bit parallel interface to either 16 or 32 bits, although both options require a two-cable arrangement.

The limitation of eight devices (seven plus the host adapter) remains in the current draft of SCSI-2 proposals. Expanding that number to 16 or more has been identified as a primary target in the recently proposed SCSI-3 project, targeted for submission to ANSI in February 1990.

Lohmeyer said that he hopes that Apple will return to the committee to help establish the extended standards. Under committee rules, he said, Apple can easily recover its voting status by resuming regular attendance. ☐

SYSTEM 6.0.2

Continued from Page 1

that they never install a new system release without first doing their own testing and watching the bulletin boards for reports of bugs and incompatibilities with software used in their shops.

Installing new system software across a large office network is a costly and time-consuming chore, a "major hassle," said Price Collins, program manager for corporate information technology at General Electric in Bridgeport, Conn.

> *"Unless they fix bugs we've encountered or improve functionality, we don't move up."*

Collins, like other cautious managers, often stays a full release behind Apple's pace. The more adventurous may upgrade more promptly, but only after at least several weeks of shakedown trials.

Even for those who conduct minimal testing, the watchword is caution.

Collins adopted System 5.0 for the hundreds of Macs in use at the GE sites he oversees only last spring, when System 6.0 came out. He said he won't consider installing 6.0.2 until at least the end of the year. He will begin testing on two machines, then move on to a network of 10, in several hardware configurations, if all is going well.

When he does upgrade, Collins will "hire" technicians from a GE consulting group to do the legwork. He trains the temporary workers for two days; they then spend two to three days installing and configuring the new systems. Typically, he said, "at least a quarter of the machines need further tweaking" to adjust passwords, Chooser selections and special setups, a process that consumes much of his staff's time for several weeks.

Collins said that upgrading would be far easier if he had the tools to write custom installation scripts encompassing not only system and network software but also peripheral drivers, E-mail and other third-party additions.

Apple's Installer program seems to have "enough hooks and handles to do the job," he said, but software that would allow him to develop custom scripts and dialogs is not available.

"We mentioned the idea to Apple, but they just say, 'That's a good idea,' " Collins said.

Less cautious, but no less careful is Bill Sterner, project manager for planning and vendor relations at the University of Chicago. Sterner works in the university's computing center, which provides support for approximately 1,000 of the more than 6,000 Macs on campus. His organization is one of the quickest in getting new systems on to users' machines.

He received System 6.0.2 three weeks ago, he said, and if all goes well, computers under his control will be upgraded this week.

Sterner's strategy for dealing with system upgrades is based on the fact that about 80 of those Macs are on the desks of the center's computer professionals.

"We have a fairly rich environment of professionals, so we can implement the software on our workstations for a while before installing it elsewhere," Sterner said. The group also monitors on-line services to see what problems other people are having.

But even with the advantage of a large base of computer professionals to serve as guinea pigs, problems arise.

"We have a strong and aggressive community that gets into trouble downloading the system from networks or other sources," Sterner said. "That's where we find out about a lot of the weaknesses in a release."

Some managers, like Phil Reed, information center analyst at Clark Equipment in Lexington, Ky., wait to see whether users really need the features that a new system release promises.

"I don't hand out upgrades blindly," Reed said. "Unless they fix bugs we've encountered or improve functionality, we don't move up."

Reed installed System 5.0 on the 80 Macs in his charge just this summer, when someone wanted to use MultiFinder.

"As soon as 6.0.2 comes in, I will put it on my machine, but until we get more 2-Mbyte machines, we probably won't need it," he said.

All in all, the managers that MacWEEK talked to were pragmatic in their approaches and philosophical about the process.

"Apple hasn't done a bad job overall, but the reality is you're going to have problems with system upgrades for any computer," Sterner said. — *By Cliff Lehman*

Tisch

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MacWk. 10/11/88

Mac may aid hurricane victims

Architect designs low-cost shelters

BY WILL McCLATCHY

ST. THOMAS, Virgin Islands — In leaving more than a half-million people homeless, Hurricane Gilbert intensified an already strong need for robust, low-cost shelter in the Caribbean.

Edward Armstrong, an American-born architect living here, thinks he may have part of the solution in a set of Mac-based designs for inexpensive shelters that he claims are strong enough to withstand hurricane-force winds.

Based on futurist Buckminster Fuller's geodesic domes, the shelters are made from sheet metal and pipes, materials readily available in most third-world countries.

Armstrong creates his designs entirely on a Macintosh II with MiniCad, a CAD package from Graphsoft Inc. of Ellicott City, Md. The program facilitates the computation of complex interrelationships among the dome's many triangles.

Such complex numerical calculations "tend to be very confusing to the neophyte," Armstrong said, but with the Macintosh he has reduced the problem to two equations that can create any combination of shapes and angles for his buildings. "All you need to know are a couple of fundamental ratios," he said. "The MiniCad program is exquisite in the way it gives you a complete definition of the problem."

Armstrong and his Mac have created designs for complex multiroom structures as well as low-cost single-dome houses, several of which are currently being used in the field.

DON HEBERT

Edward Armstong designed these geodesic domes with Graphsoft's MiniCad.

"I can manufacture a complete shelter for a family that is 24 feet in diameter, 20 feet high, has solar hot water, 12 volts of electricity and is delivered to the site for less than $2,000," he said. Simple diagram instructions show how to assemble the dome without tools.

Armstrong said it probably will take at least several more hurricanes before relief organizations realize that long-term solutions to housing are cheaper and more efficient than short term ones.

"For the amount of money that relief organizations are going to spend on shelters, I could build them a home," he said. "The cost of a tent is the same as the cost of a shelter, and they want the tent back!"

Armstrong is looking for equity partners for his company, Las Islas Inc., to help him achieve his dream of providing "every family in the world a place to live."

While Armstrong said he invites builders to use his geodesic designs, he suggested that if they plan to modify the plans frequently, they should look into the Macintosh. □

Suitcase II ships with two added utilities

BY HENRY NORR

BATON ROUGE, La. — Newly adorned with a fashionable Roman numeral, a long-awaited upgrade to Fifth Generation Systems' Suitcase utility began shipping last week.

Suitcase II, announced in July under the name Suitcase 2.0, is designed to simplify installation and management, and fonts, desk accessories and other resources (see MacWEEK, Aug. 2).

Overriding limits built into the Macintosh's system software, the $79 program makes it possible to use hundreds of typefaces and DAs without a cumbersome installation process.

Among other enhancements, the new version of Suitcase allows open suitcase files to be kept in any folder, adds easy access to sounds and FKeys, displays font names in their own typeface in the font menus of most applications and adds customizable keyboard commands for most of its functions.

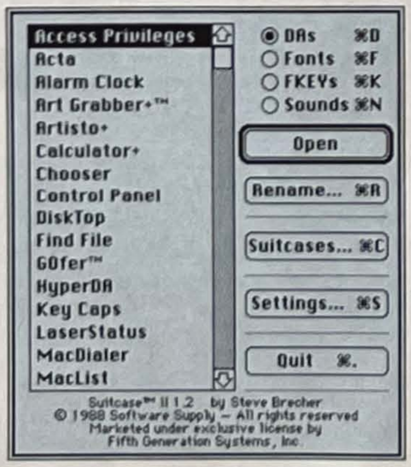
The program ships with two related utilities: Font Harmony, which resolves font numbering conflicts and integrates font style variations into a single font family to reduce menu clutter, and Font and Sound Valet, which compresses screen fonts and beep-sounds files by up to 50 percent.

Suitcase II's author, programmer Steve Brecher, said that only a minor glitch and unfortunate timing kept the upgraded program from shipping last month as originally planned. "I gave what I thought was the final version of Suitcase II to Fifth Generation in late September, then left the country for two weeks to attend the European Developers' Conference," Brecher said.

"When I got home," he said, "Fifth Generation had discovered that it didn't work on the Mac Plus, thanks to a small last-minute change that I mistakenly thought was innocuous."

Brecher said that the problem, once discovered, required only a quick fix.

Fifth Generation Systems is located at 11200 Industriplex Blvd., Baton Rouge, La. 70809; (504) 291-7221. □



Suitcase™ II 1.2 by Steve Brecher
© 1988 Software Supply – All rights reserved
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Fifth Generation Systems, Inc.

Fifth Generation's Suitcase II offers access to multiple fonts, DAs, FKEYs or sounds.

ImageWriter driver upgraded

CUPERTINO, Calif. — Apple has released a long-delayed upgrade to the driver software for the ImageWriter LQ that fixes problems with word spacing when printing in Best mode.

The new ImageWriter LQ Driver 2.0 and AppleTalk ImageWriter LQ Driver 2.0 are available free from all certified Apple resellers as well as on Apple Macintosh System Software Version 6.0.2 Printing Tools disk.

To install, users drag the appropriate driver into the Macintosh System folder, replacing the older version.

Apple is located at 20525 Mariani Ave., Cupertino, Calif. 95014; (408) 996-1010. □

MacInTouch

BY RIC FORD AND RICK LEPAGE

Bugs and Tips

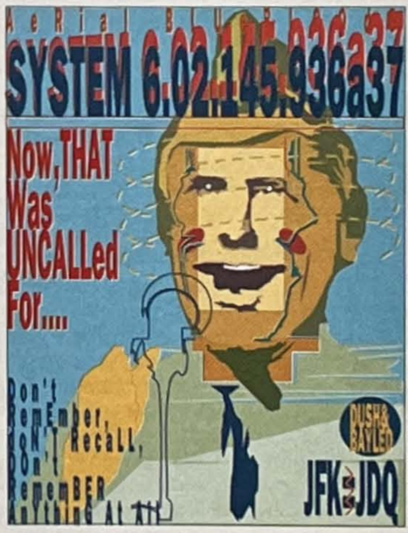
System 6.0.2. Macintosh developers have had Version 6.0.2 of Apple's system software for several weeks, and late reports say the long-delayed update, originally expected last spring, is now available to end users from some Apple dealers and on-line services.

The initial "rep" on the new version is good. After all the delays, this one seems to have achieved stability and compatibility with most other software. We have installed it on three different Mac II and Mac SE systems with no problems so far, although one user reports crashes with TOPS 2.0 when modifier keys (Control, Option and Caps Lock) are used at start-up time, as well as an incompatibility with the PT-109 game.

SCSI disk incompatibilities and other bugs that appeared in earlier 6.0 releases have been fixed in 6.0.2. The new software brings a range of improvements over the System Tools 5.0 software that was the previous standard. Long lists of MultiFinder, QuickDraw and printing bugs have been squashed; the Sound Manager has been greatly improved; and new features like the Map cdev (Control Panel device), the Responder file for Interpoll (Apple's network management application), styled text support (making bold and italic possible even in simple text editors) and step-by-step progress reports as disks are formatted have been added.

Apple claims some performance improvements in the new software, and it is the first version to support the Mac IIx. Along with the new System and Finder come updated versions of utilities like Disk First Aid, Font/DA Mover, HD Setup and HD Backup.

As with previous versions, the new software is best installed via Apple's Installer application and its installation scripts. It's not a one-step process, however, and there are a few things to remember in doing a complete update.



SYSTEM 6.02.145.936a37
Now,THAT Was UNCALLed For....
Don't RemEmber, DON'T RecALL, Don't RememBER AnYthinG At All
JFK JDQ

LAX JAXSYN/SYNTAX

First is the way the scripts work. If you set up a hard disk for compatibility with more than one Mac, remember that the standard scripts on the System Tools disk are cumulative. Installing the new software with the Mac II script will get you all the necessary resources for a Mac Plus, SE and II. Using an SE script will install only those resources needed for a Plus or SE.

Using the "minimal" scripts from the Special Installer Scripts folder on the utilities disk creates a 6.0.2 System for one particular Macintosh and no others. Thus, if you install using the Minimal Plus script, the system disk you configure will not run correctly on a Mac II or SE, but the System file will be smaller (and perhaps fit onto a floppy disk).

The one script that many people will need from the Special Installer Scripts folder is the AppleShare script. The regular scripts don't update AppleShare, so you have to remember to run this one, too, if you need it. Other items on the checklist include manually copying new printer files and utilities to your main disks.

To avoid Finder memory limitations on a MultiFinder configuration with a large hard disk, it helps to increase the Finder's memory allotment with Get Info in MultiFinder. If you have customized your Finder with Layout, a free program by Mike O'Connor that lets you change such desktop defaults as the spacing of icons and the format of dates, you'll have to run it over again on the new Finder. Layout 1.7 is the current version, available from on-line services and users groups.

We ran into some additional problems because Apple's installer scripts put a minimal set of LaserWriter screen fonts (Helvetica, Times, Courier) into the new System file. This overrode the full range of sizes we had been accessing in a separate file through Fifth Generation Systems' Suitcase utility, leaving only 10- and 12-point sizes. Removing these few redundant fonts from the System file with Font/DA Mover gave us back Suitcase control. □

We welcome your comments and questions on MacInTouch at MacWEEK, One Kendall Square, Suite 326, Cambridge, Mass. 02139; (617) 577-1033. Electronic mail: MCI Mail: RICFORD, RLEPAGE, MACWEEK-BOSTON; CIS: 75056,1225 (Ric Ford), 75016,350 (Rick LePage); Delphi/PAN: MACWEEKBOS; AppleLink (address to the attention of "MacInTouch" in Subject): X0702; MacNET: RICFORD, RICKLEPAGE; Internet: RICFORD@CUP.PORTAL.COM; GEnie: MACWEEKBOS.

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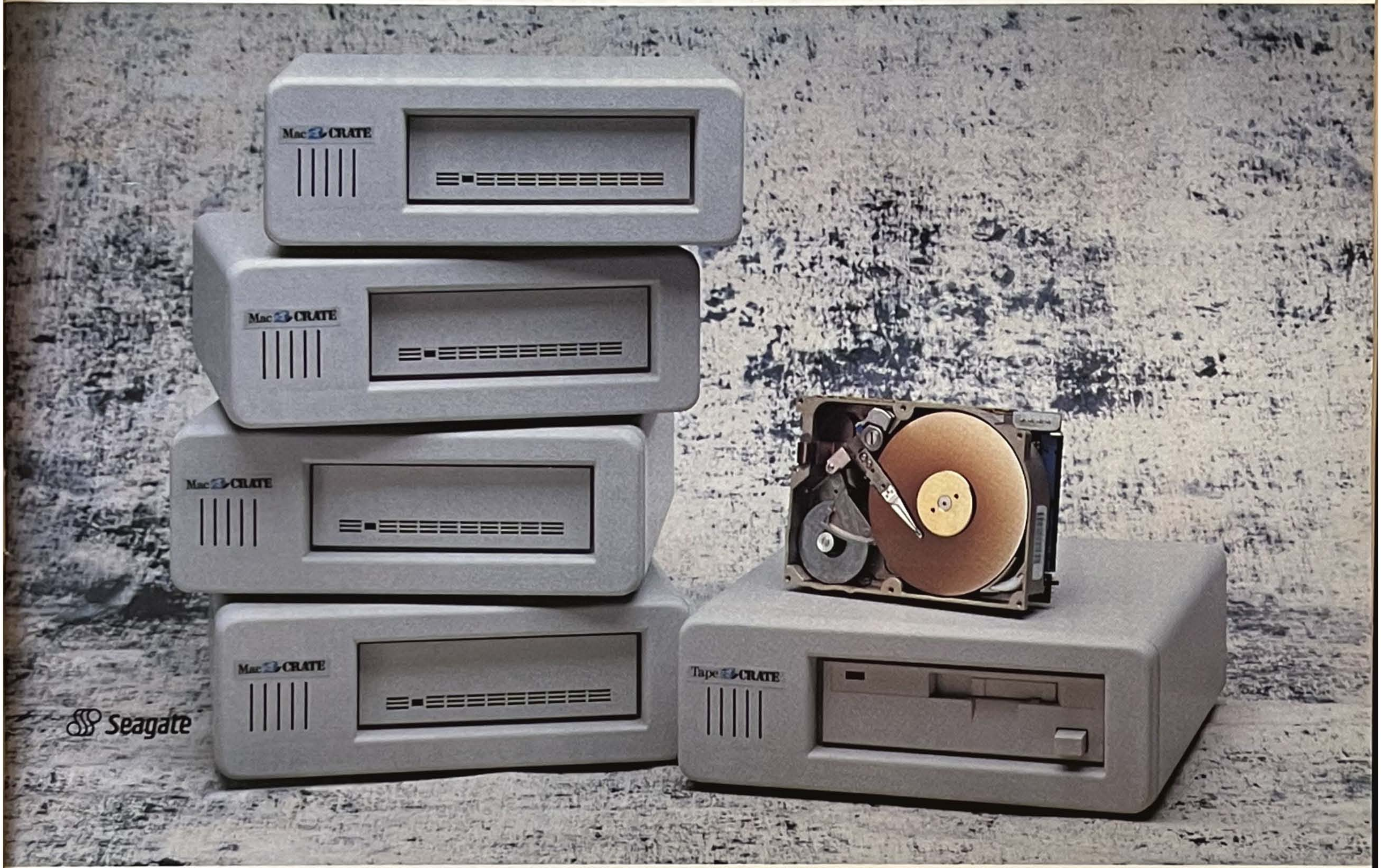

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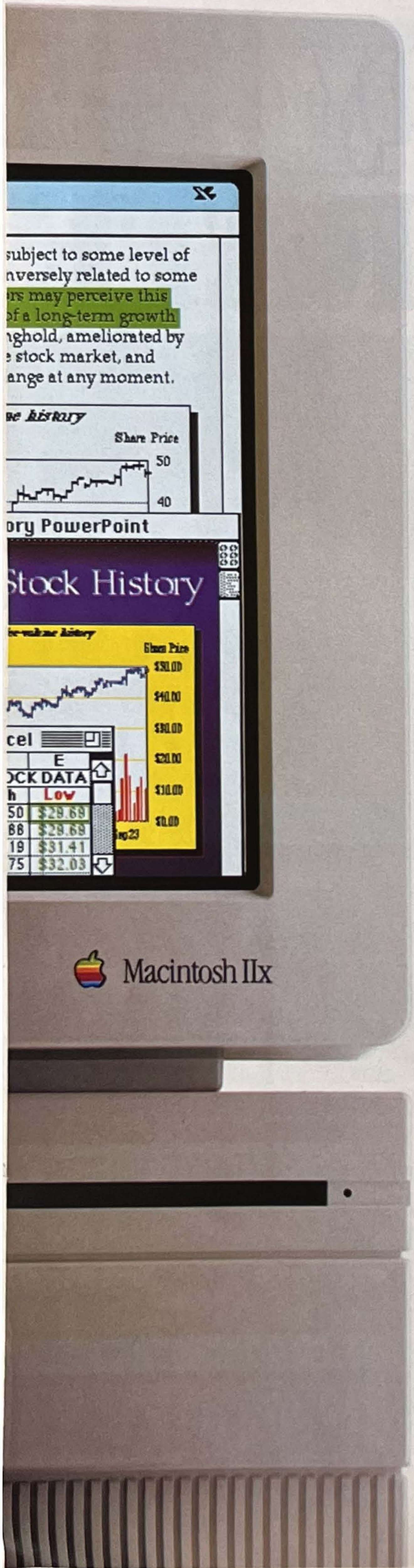

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The expansive talents of Macintosh are inspiring a continuous stream of advances. Including, even, a new one from us–the Macintosh IIx. It features the powerful new 68030 processor. And delivers the benefits of integrating computer systems. Because with the appropriate software, the IIx reads disks in multiple formats. Including MS-DOS, OS/2, and, of course, Macintosh.

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Good. Here are four of them.

We couldn't help overhearing the ad next to us.

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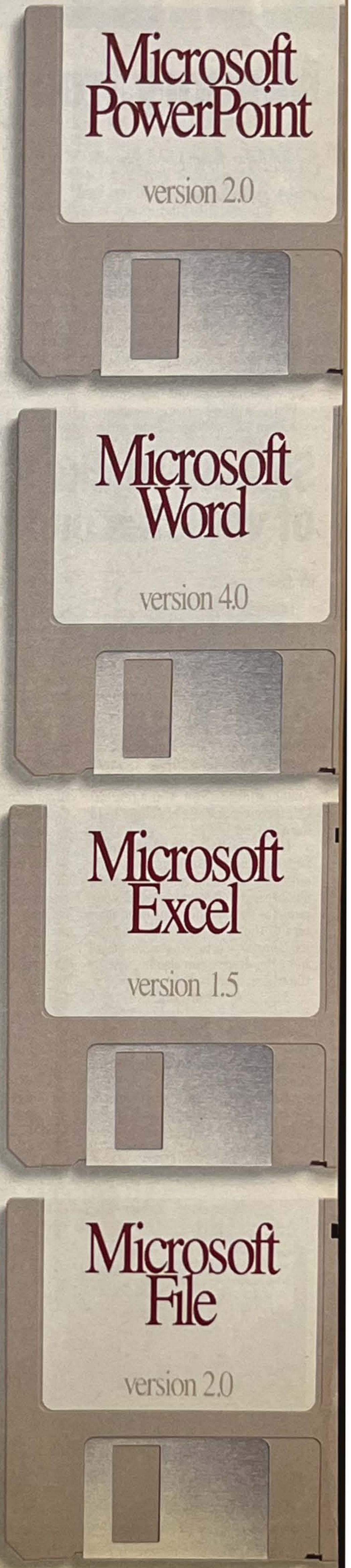


Memory from another world

SIMMs for IBMs run on Macs

BY WILL McCLATCHY

Clever dealers and memory brokers are finding a solution to Apple's inability to ship memory modules, and it's coming from outside the Mac world. Many memory modules made for IBM PC compatibles and IBM PS/2s, experience reveals, work without a hitch in a Mac.

With Apple's own memory expansion kits still back-ordered an average of 13 weeks, according to dealers, the idea of using SIMMs not originally designed for the Mac has gained appeal among desperate users. IBM dealers and independent memory brokers said SIMMs from Big Blue and other manufacturers are readily available.

ComputerTown, a Nashua, N.H.-based dealer of both Apple and IBM products, is one retail store that has found that experimentation pays. "We have some very creative people, and they said, 'There must be some way to get these people memory' " during the height of the memory crunch, said Mark Pinksten, regional service manager of ComputerTown's four-store chain.

There was. Several combinations of IBM SIMMs performed perfectly on the Mac. For instance, the IBM PS/2 Half-Megabyte Memory Module Kit, which is designed for PS/2 models 50 and 60, runs without complication in the Mac II.

Consisting of two SIMMS outfitted with 256-Kbit chips, the package offers a total of 512 Kbytes of RAM and retails for $215, said an IBM representative. That puts the price per megabyte at a competitive $430. IBM upgrade kits using 1-Mbit chips sell for about $500 to $700 per megabyte, depending on speed.

Pinksten said that, like the Macs, most PS/2 memory-module edge connectors conform to the industry standard. Recent PS/2 models, such as the Model 70, however, use a non-standard SIMM board that is much too large to fit into Mac add-in slots, he said.

Most PS/2 SIMMs run at speeds of 80 nanoseconds to 120 nanoseconds, according to an IBM representative. The Mac II requires memory running at 120 nanoseconds or faster, while the Mac SE and Plus require only 150-nanosecond or better memory.

Swapping is by no means limited to IBM SIMMs. Bargain-basement shoppers can also find SIMMs designed by third parties for PC compatibles or the PS/2 that work well in Macs.

Bargains N' Deals, a discount memory broker in Fremont, Calif., is selling open-market SIMMs that it claims will work in IBM PS/2s, PC compatibles, the Mac II and almost any computer or add-on board that accepts standard SIMM modules.

"This makes it very easy for corporations to buy 100 and 200 modules and then use them for any upgrade," said Sam Shaw, a sales executive at Bargains N' Deals. "If it has Apple computers and IBMs, by buying these modules it can use them either way."

Among such SIMMs is a board retailing for $350 that contains 1 Mbyte of 120-nanosecond 1-Mbit chips. Another module contains 256 Kbytes using 100-nanosecond 256-Kbit chips and sells for $90, or 1 Mbyte for $360.

Bargains N' Deals' 1-Mbyte board carries an extra parity chip to check for errors, Shaw said, something the PS/2 requires but the Mac simply ignores.

While some dealers and brokers have discovered how to mix and match memory modules, an informal survey of retail stores that sell both Apple and IBM equipment found that only a small percentage were aware of the strategy.

One salesman at a medium-size chain scoffed at the idea of switching memory. According to the salesman, if it were possible, the chain's central technical planning department would certainly have notified his store. He said, "If we could do it, we would, believe me." □

System tracks location of vehicles on a map

BY JIRI WEISS

LOS ANGELES — Keeping track of company trucks and the latter-day cowboys who drive them is now as easy as looking at a map on a Macintosh screen.

ComGrafix Inc. of Clearwater, Fla., together with Sony Corp. of America of Park Ridge, N.J., demonstrated Version 1.0 of its Macintosh-based automatic vehicle location system at the American Trucking Association's 1988 Management Conference and Exhibition, held here Oct. 9-18.

Users install in their trucks $3,300 transmitters from Sony that automatically send an identification signal via satellite to a central computer at the Washington headquarters of the communications company Geostar Corp. Messages keyed in by the drivers can also be sent via the transmitters.

MapStar, ComGrafix's $3,000 software package, downloads the trucks' positions and any messages each hour, and puts icons in the appropriate place on a map of the highway system.

Sony and ComGrafix said the system is valuable because it makes delivery scheduling much more effective and allows companies to predict more precisely when a truck will arrive at a particular destination.

"It's an extension of the desktop mapping solution that will be useful to trucking companies, the government, emergency services and anyone with delivery vehicles," said Sonny Najera, an Apple manager who is familiar with the ComGrafix package.

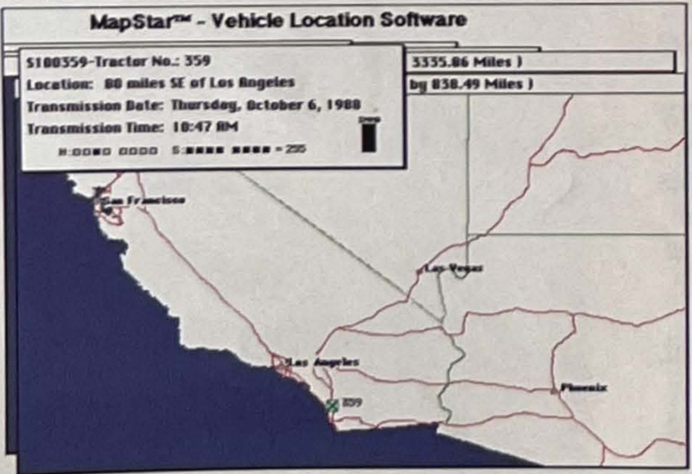
Information about each vehicle can be sent through MapStar to HyperCard and relational databases such as ACIUS' 4th Dimension and Blyth's Omnis 3 Plus, according to Comgrafix.

Keeping truck drivers honest is a side benefit, said Bob Mesnik, Sony's manager of technical operations. "Sometimes drivers who'd rather be cowboys report they are on their way when in fact they have made a detour to Las Vegas."

Aside from the software and hardware investment, users pay a $45 per month subscription fee to Geostar.

Hughes Network Systems of Germantown, Md., also offers the MapStar tracking system with its own hardware, according to ComGrafix.

Sony Corp. of America is located at Sony Drive, Park Ridge, N.J. 07656; (201) 930-6136. ComGrafix Inc. is at 302 S. Garden Ave., Clearwater, Fla. 34616; (813) 443-6807. □


MapStar™ - Vehicle Location Software

S100359-Tractor No.: 359
Location: 80 miles SE of Los Angeles
Transmission Date: Thursday, October 6, 1988
Transmission Time: 10:47 AM

3335.86 Miles)
by 838.49 Miles)

Trucking companies can monitor the location of their drivers by installing a transmitter in the truck that sends a signal to the home office.

StackWEEK

BY ERIC ALDERMAN AND STEVE MICHEL

Updates

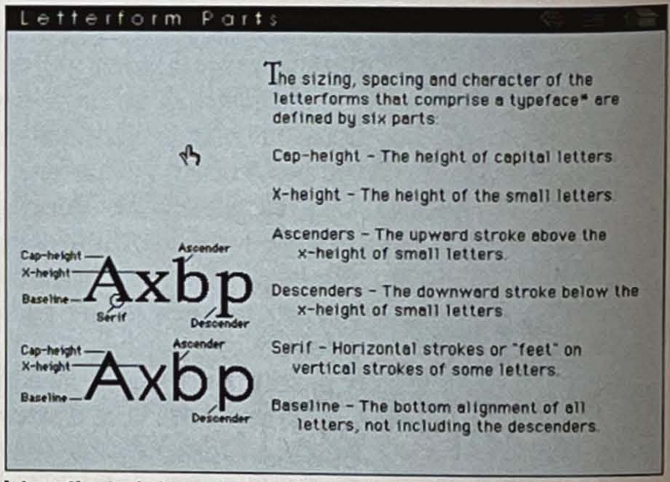
Recently, we've received release versions of two products mentioned in previous columns.

Manhole is an interactive adventure stack designed for children, who love it when they can pry their parents away. It's certainly one of the most graphically intricate and exciting stacks of its kind. One nice thing about Manhole is that there's no pressure to "solve" some puzzle or to hunt down any specific clues. Instead, you're simply rambling through an Alice in Wonderland-like fantasy, discovering creatures along the way.

Since we first mentioned Manhole, it has been acquired by TENpoint0, a division of Mediagenic, which used to be called Activision. If you can spare the 5 Mbytes of disk space for the 600-plus screens, we recommend a trip down the Manhole.

The other recently released stack is DTP Advisor from Broderbund. This product is an interesting mix of a tutorial on desktop publishing concepts and a database for tracking desktop publishing projects. Overall, it provides a substantial amount of information and good links between the reference material and the database section.

One annoying feature is that you access the Preferences screen by simultaneously holding down the Shift and Option keys. Aside from being unintuitive, this combination also interferes with HyperCard's Shift-Option-Command-click shortcut for peeking at field scripts.


Letterform Parts

The sizing, spacing and character of the letterforms that comprise a typeface* are defined by six parts:

Cap-height - The height of capital letters.

X-height - The height of the small letters.

Ascenders - The upward stroke above the x-height of small letters.

Descenders - The downward stroke below the x-height of small letters.

Serif - Horizontal strokes or "feet" on vertical strokes of some letters.

Baseline - The bottom alignment of all letters, not including the descenders.

Interactive techniques are used to explain desktop publishing concepts.

This complaint aside, however, the DTP Advisor stack appears to be worthwhile for those learning about desktop publishing. And while high-volume production environments may require a more powerful tracking system, this stack could provide a good base for customization.

Tips

Did you ever notice that when you open a card and then begin to scroll a scrolling field, there's always a short but annoying delay before the text begins to move? An unnamed White House aide claimed recently that this happens because HyperCard does not store field text in a standard TextEdit data structure (thus speeding up card flipping). When you access the field by opening or scrolling it, HyperCard copies it into memory, thereby allowing it to be edited.

The suggested solution is to "pre-warm" the field by writing an openCard handler that uses the **click at** command to click on the up arrow for the field. Be sure you do this with the screen unlocked. You'll then notice that there's no delay when you scroll the field.

Correction. In the Oct. 11 column, we mistakenly wrote that Lofty Becker had written to us regarding his grayed-out Chicago font Disable, which is available on CompuServe. In fact, it was Sandy Nazario who created the font and let us know about it. We apologize to Sandy, and on behalf of the HyperCard community, we salute her weary eyes and tired mouse finger for performing this tiresome task. — *E.A.*

Reference

Mediagenic, 3885 Bohannon Drive, Menlo Park, Calif. 94025; (415) 329-0800.
Broderbund, 17 Paul Drive, San Rafael, Calif. 94903; (415) 479-1170. □

If you have questions, comments or tips, contact us by E-mail at: MCI: STACKWEEK; AppleLink: D1507 (Steve) or D1577 (Eric).

Mac AutoCAD on track for year-end release

BY WILL McCLATCHY

SAUSALITO, Calif. — With AutoCAD Release 10 for the IBM PC out the door, Autodesk Inc. is revving up the Mac version of its flagship 3-D design product.

The Sausalito, Calif.-based CAD leader said it has thrown a few surprise features into the $3,000 Macintosh program, which is now expected to ship near the end of the year.

The list of features being added includes tear-off menus, independent text and drawing windows that are resizable at any time and a programmable on-screen button menu that can execute any command or macro.

Autodesk also said that its dealers and value-added resellers, considered crucial to the company's dominance in the PC market, are solidly behind the effort to bring the product to the Mac. "Not only are we coming over but our friends are coming over, too," said John Forbes, product manager of AutoCAD.

Forbes confirmed that Autodesk will support the new Macintosh IIx and its 68882 floating-point processor. Math coprocessors greatly speed the calculation of 3-D objects, he said.

Autodesk dealers recently got a chance to test the Macintosh program at CAD CAMP '88, a conference of AutoCAD dealers held in San Rafael, Calif. Forbes said he and his colleagues showed standard AutoCAD templates and programs written in AutoLISP, the company's design language, running without change when brought over from the PC to the Macintosh.

"Traditionally you would have to go back and do a lot of work from scratch," Forbes said. Large corporations and third-party AutoCAD dealers who want to move to the Mac will see significant cost savings because they often have a large current investment in PC-based AutoCAD drawings, he said.

Release 10 for the PC began to ship earlier this month, Forbes said.

Autodesk is located at 2320 Marinship Way, Sausalito, Calif. 94965; (415) 332-2344. □

FasTrack board enters civilian life

BY JONATHAN PERROW

SAN DIEGO — An accelerator board for the Mac Plus and SE already in use by the military is making its way into the public sector.

FasTrack, currently shipping from Computer System Associates Inc. of San Diego, is a Motorola 68020-based accelerator with a 68882 math coprocessor. The $895 board should prove attractive in such fields as CAD, spreadsheets, 3-D solids modeling and others where "number crunching" is important, according to the company.

In contrast to most accelerators, which incorporate a faster CPU than they replace, the clock rate of FasTrack's 68020 — almost 8 MHz — is the same as that of the 68000 in the Mac Plus and SE. But the board's 68882 floating-point math chip runs at an independent clock rate of 20 or 25 MHz.

"FasTrack provides speed where it really counts," said Bill Reed, director of sales and marketing for Computer System Associates. "Why spend two to three times the money for a higher-frequency [68020] when most of the speed increase is coming from the 68882?"

Neither the SE nor the Plus has a math coprocessor built in. The Mac II comes with a 68881, an earlier version of the Motorola math chip. The new IIx is the first Apple machine equipped with a 68882.

Counting the benefits of the asynchronous 68882 running at 20 or 25 MHz to speed up floating-point calculations, the board provides "near-Mac II performance" overall from a Plus or SE, Reed said.

Already in use at the Naval Ocean Systems Center in San Diego, the FasTrack board was originally built as a "ruggedized" accelerator, soldered into Macs that were moved frequently from place to place, Reed said.

The board is installed free of charge by the company, which first removes the 68000 processor in both the Plus and the SE. On the Plus, Computer System Associates will then solder a socket in place of the 68000 and snap FasTrack into the socket. FasTrack is plugged into the same socket on the SE.

The company is also marketing a $74.95 hardware device called Blinky that is designed to help Mac users monitor activity on the SCSI bus. The external box, which attaches to the Mac's SCSI port and includes a 25-pin pass-through connector, has eight LED indicators that light up when the computer "talks" to any attached SCSI peripheral.

Reed said that Blinky could help users know when a delay is the result of a "hung" program or when the computer is sending data to a printer, for example.

Computer System Associates Inc. is located at 7564 Trade St., San Diego, Calif. 92121; (619) 566-3911. □

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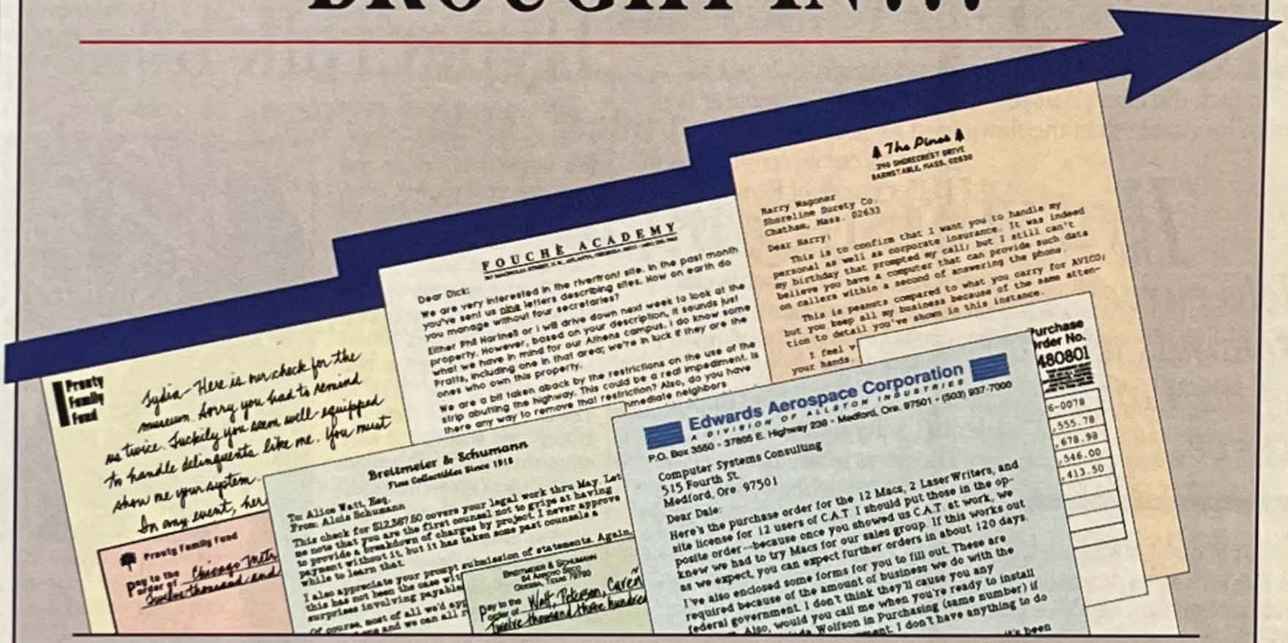

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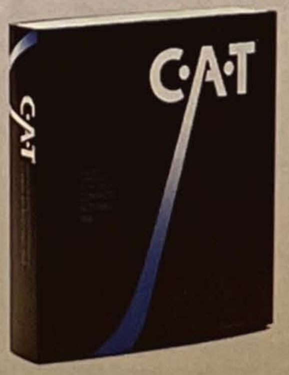

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Editorial

Apple should answer Jobs with innovation

What goes up must come down. Sir Isaac Newton proved that, but now Steve Jobs wants us to believe that this law of physics also applies to technology life cycles.

To illustrate, Jobs presented a series of slides at the NeXT roll out this month that showed a repeating pattern of innovation growth and decline for each of the standard personal computer architectures: Apple II, IBM PC and Macintosh. According to his interpretation, innovation for the Mac architecture has been on a steep rise but will peak next year and is thereafter doomed to a technological glide slope.

Of course, it was convenient for him to concede that his own NeXT machine, which he claimed is the fourth wave of personal computing, is subject to the same law. He would like us to believe in the inevitability of the curve's upstroke for the NeXT machine. He'll worry about the glide slope later.

In fact, the curve's upstroke for the NeXT computer is no more inevitable than the downward glide is for the Mac.

The Jobs curve reminds us of the Laffer curve.

The Jobs curve reminds us of the Laffer curve of Reaganomics fame. The Laffer curve was a representation of the theory that governments can increase tax revenues by cutting tax rates. It looked good on paper, but when implemented as policy, it brought about unprecedented federal deficits.

The point here, of course, is not to argue national economic policy, but to illustrate that tidy models don't always work out so nicely in the real world.

In fact, Jobs' model is already belied by the new wave of innovation for the PC architecture generated by OS/2. While the jury is still out on OS/2's long-term prospects, it is evident that the new operating system has inspired a new round of development for what should, by the curve's prediction, be an all-but-dead architecture.

According to the theory, innovation stops for a particular platform when the weight of the installed base becomes an impediment to new development.

But OS/2 shows that if computer makers are willing to let some of the installed base become obsolete, they can create the conditions to engender a new wave of innovation.

So far, Apple hasn't had to make such a break with the past. It has been able to advance its 5-year-old architecture without breeding incompatibilities. But if the Jobs model holds true, future advances in the technology are likely to be more troublesome, and with an installed base of well over a million, Apple will soon begin to delay or decline innovation.

That would be a terrible mistake. With the NeXT design finally on the table, Apple has to respond with its own innovations. A videotape of the next-century Knowledge Navigator is not enough anymore. Apple's product-development group should increase the pace of innovation by delivering — for starters — an improved user interface, a new Mac operating system, faster throughput, more object-oriented development tools, an optical read-write disk of its own, and a laptop computer that will set new standards for portable computing.

By aggressively innovating when the iron is hot, Apple can prove to the world that Jobs' curve is a laugher. □

LETTERS

A wish for more MacInTouch

Having lived for a few months with your new layout and design overhaul, I feel that your publication is generally more accessible — and hence useful — than before. The addition of the GA Supplement has also proven to be a good idea.

The one glaring exception to the overall improvement is your having severely cut back on the space allotted to the MacInTouch feature. I simply can't fathom why you would so drastically reduce the one page which, on a line-for-line basis, offered your readers the most important and concentrated reporting of news, tips, bugs and analyses. Ric Ford and Rick LePage are much too good to relegate to the current single column. Please heed this plea (and the others I'm sure you've received), give them some room to breathe, and let them keep up the good work!

Dan Weissman
Visible Pictures Ltd.
Film + Video Production
New York, N.Y.

Metcalfe on left, Krause on right

As a Macintosh user, I enjoy reading your magazine to obtain the latest trends and product information. However, I was disappointed to see that you had the wrong identification under the picture on Page 50 of the Oct. 4 issue for 3Com CEO William Krause and founder Robert Metcalfe. Metcalfe is on the left and Krause is on the right.

David P. Jasany
3Com
Cleveland, Ohio

MAC SOAPBOX/*Paul Goodman*

HyperTalk honeymoon is over

GORDON STUDER

Now that HyperCard's first birthday has come and gone, it's time to pack away the souvenir cocktail napkins and take a good, hard look at HyperCard.

When Apple introduced HyperCard in August 1987, the software created almost as much excitement as that surrounding the Mac in 1984. For many people, HyperCard was to software what the Macintosh was to hardware. Others immediately declared HyperTalk to be the ultimate Macintosh development environment.

But I believe this euphoria has prevented users and observers from taking a realistic view of the software and its capabilities.

Criticizing HyperCard and HyperTalk has become equivalent to trashing mom, apple pie and Walt Disney. Those people who so quickly became HyperCard pundits and "experts" can't criticize the software; it might damage both their livelihood and their relationship with Apple. Thus, seldom is heard a discouraging word.

While public outcry is still almost non-existent, private comment is starting to flow. It can be heard where programmers gather late at night after their tongues have been loosened by a few too many Pepsis. This talk is not about features that should be added to HyperCard, like "sticky buttons" or resizable windows. No, these discussions revolve around more fundamental problems, most notably the overall weakness of the metaphor as a development environment and the poor design of the HyperTalk language.

Careful study of HyperTalk, its syntax and programming structures raises many questions. The most important deals with why HyperCard's designers departed so dramatically from established programming language conventions. For example, it would have seemed sensible for HyperTalk to follow Pascal's structures and standards, since the Mac is most associated with that programming language. (In fact, the Mac's Toolbox routines were written with the expectation that a programmer would be working with Pascal.)

But the designers of HyperTalk must have been under great pressure to create a programming language "for the rest of us." The result was a HyperTalk that blended together the facilities of a traditional programming language with the ability to understand many "English-like" constructs. For instance, the keyword "is" can often be substituted for the symbol "=".

This melding created a language that is neither one nor the other. HyperTalk lacks many of the sophisticated features found in most languages, its structures are often inconsistent with one another and, maybe worst of all, commands that were apparently named for Pascal structures don't work the way they do in Pascal.

An example of this is the Repeat Until loop that seems to be based on the Pascal loop of the same name. In fact, the two work very differently. HyperTalk is filled with such inconsistencies.

Now look at HyperTalk's commands. While it boasts some powerful commands, HyperTalk lacks a long list of commands and capabilities that are part of essentially every other high-level programming language. This absence hampers the development of stacks and prevents quite a few programmers from seeing HyperCard as a "real" development environment.

Foremost in this category is arrays, which permit many data items to be accessed easily by a single programming statement. (Arrays can be thought of as a long list of related data.) Without arrays, the HyperTalk programmer must either issue a long repetition of program commands or simulate their function with other HyperTalk features. Few programmers find either solution acceptable.

None of this is intended to detract from HyperCard as a concept or product. My point is to illustrate that the product is still immature. No doubt it will be improved and refined over the next few years, but much of this process depends on a frank discussion of the software's strengths and weaknesses.

Without this truthful dialogue, HyperCard can never become what we all hope it will. □

Paul Goodman is an attorney specializing in computer and venture-capital law. He has written five books on computer programming, including the forthcoming "Unleashing HyperCard" from Tab Books.

WASHINGTON SQUARE

Sculley's odyssey off track

CEO tries to prove he's an innovator

In August, Apple had its chance to announce to corporate America that it has arrived: Fortune featured Apple CEO John Sculley on its cover.

You might expect to see Sculley with a stack of SEs in the background and the Mac II next to him. Instead, he sat with what looked, at first glance, like a laptop, perhaps Apple's highly anticipated machine.

Then you realize that he is holding it the wrong way for it to be a laptop, breaking as it does in the middle.

Did Apple really expect the average Fortune reader to know that he held a prototype of the Knowledge Navigator? This is a magazine that blithely shows a reporter in the same issue sitting by a Mac, but the caption calls it a PC. Talk about confusing the captains of industry.

ALAN BRODY

Was Sculley getting ahead of himself? The supposed reason he sat there with this unrecognizable critter was to send a message: "This is what we at Apple mean by innovation." But a non-existent computer from a company that doesn't comment on unannounced products?

At first glance this seems a poor use of PR. Yet Sculley is by no means naive in this area, belying his intent of selling an idea from his book "Odyssey." Rather, Sculley obviously wants the world to know that he is as much a visionary as Steve Jobs, only more level-headed and organized.

This is a mistake because the object he holds in his hands is missing more than its insides. It is missing a paradigm shift.

The fact is, the ideas behind the Knowledge Navigator assume that we will work in the future exactly as we do now. In other words, by the year 2000, the technology will deliver what we always wanted in 1988.

But by 2000 our use of computers will be so different that, even if the technology permitted it, we probably wouldn't find his vision practical. Will we really want to talk to a "genie in a computer" named Phil? Remember, Phil does more than just understand words, which other computers can do these days. He understands concepts rooted in common sense, which isn't yet done. Would you like to spend your day talking to a total idiot? Because without a gigantic leap in artificial intelligence, that is what Phil will be.

It just may turn out that building a portable HAL like in the movie "2001" is an impossible quest in this lifetime.

But even if the technology does come around, Sculley himself admits that it is years away. So why is he sticking his neck out? Is he that confident that the future is moving in his direction? If so, he is making two mistakes: overlooking the competition and falling for the classic executive misconception that projection is the same as creation. It absolutely is not.

Successful invention requires not only predicting a specific product but also a specific moment in the future where it belongs. The very best are able to invent part of that future as well. Can Sculley do that?

Many of the ideas you see in Knowledge Navigator are derived from Alan Kay's Dynabook, combined with HyperCard and packaged in expensive promotional videos.

But does a corporate chief really invent? Can he even afford to?

New ideas tend to be convulsive not because they force change, but because they require a drastic shift from the expected.

Sculley made his name by stabilizing Apple and extending its product lines. Other than raising prices and challenging NeXT with a lackluster machine, when has he provided a real product surprise, a genuine shock of the new?

Having the right basic idea is not enough; continuing a viable concept from one era to the next is much more difficult than it seems. That's because the leap from the lush world of present success to the prickly world of future reality usually involves some unexpected changes.

William Whewell, who first studied this phenomenon in 19th century academia, had this to say about invention: "The catastrophist constructs theories, the uniformitarian demolishes them." In other words, gray-suited corporate executives are probably incapable of generating truly new ideas.

We have been told that Sculley invented technology that competes against the Sony Trinitron, but somebody stifled his inventiveness after that achievement. Most inventors I know keep on inventing. What Sculley continues to do is lead people to new heights of corporate achievement. That's good, but it is not the same thing.

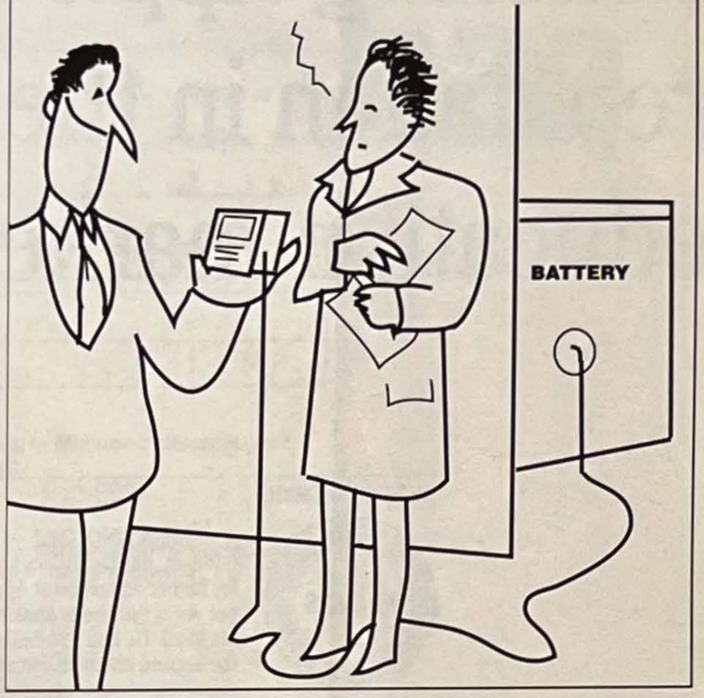
But beyond the apparent need to appear visionary, there seems to be another, more political reason for Sculley's promoting the Knowledge Navigator in Fortune.

The Navigator relies heavily on the ideas of HyperCard, and it seems likely that its underlying concepts represent the wave of the future for Apple's system software. Yet that fact is not a matter of consensus at Apple or among its leading developers. Many have challenged the validity of HyperCard as a free Apple product.

In effect, Sculley is grandstanding HyperCard before the public to send a message to people, not all of whom are crazy about the product. And the only certainty is that careers will be made and broken over this issue.

But the question remains: Why show a fictitious machine to a magazine audience that doesn't understand it instead of to the readers of the Mac publications? Is it because Mac people would have equated Sculley's action with the Canadian publisher who used a similar stage prop earlier this year?

It certainly took a kind of courage to sit out there in the nation's newsstands holding the figment of a corporation's imagination. But it will probably backfire. Executives don't take kindly to amorphous trinkets presented as reality on the cover of their favorite magazine. They just may find it as insulting as Jobs' infamous lemmings ad of 1985. ☐



"Chief, there's something you need to know about the portability factor."

SCREEN SHOTS/*Louis Dunn*

ROUND ROBIN/*Society*

Short-changing hardware

Education biased toward software

We live in a computer world full of software people. Software gets the adulation; software makes the computer world spin.

Hardware bores most computer people. Many of us view computers merely as the things on which we run programs. Considering society's unhealthy emphasis on software, it's amazing that machines like the Macintosh were ever built.

JOHN EDWARDS

Have you been to your neighborhood school lately? If so, you've probably seen lots of eager little fingers pounding out code by the bit bucket. But look around your local Lyceum's computer lab. Scan the room for any trace of a prototype board, chip extractor or logic probe. Keep looking.

Software magic has so captured our imaginations that many of us fail to appreciate the importance of hardware. A computer wizard, almost by definition, has come to mean someone who slaves over a keyboard, not a circuit board.

Consider the computer industry's most glamorous names: Bill Gates, Philippe Kahn, Mitch Kapor, Bill Atkinson. Software heroes all. Hardware heros? The list pretty much begins and ends with Steve Wozniak and Steve Jobs.

Hardware doesn't fire our imagination in the same way software does. The popular impression is that programs are created by individuals, while computers are designed and manufactured by corporations. The fact that most contemporary software packages are written by teams of programmers working for monolithic corporations seems to have escaped our attention.

As a result, America's brightest computer prodigies, indoctrinated by school and society to equate microcoding with the aesthetic beauty of poetry, are seductively lured into the software camp. Meanwhile, we buy our printers from Japan, our monitors from South Korea and our hard disk drives from Taiwan. Japan is a major force in supercomputer and ultracomputer technology. How long will it be before our microcomputers are also designed overseas?

Not so long ago, hardware was king. When I was a teen-ager, in the late 1960s, the popular thing among scientifically inclined kids was to construct our own electronics projects. Back then, companies like Heathkit, KnightKit — even Radio Shack — sold inexpensive do-it-yourself kits.

With a soldering pencil and a pair of wire cutters, we could build anything from a volt-ohm meter to a radio transmitter capable of international coverage. Many of today's computer design engineers carry scars received from an errant solder blob or the fervid caress of a hot mercury vapor tube.

But with society's current emphasis on software, all that has become passe. School computer (i.e., software) clubs have largely destroyed classroom electronics and science and amateur radio clubs. No longer can kids pretend to be "mad scientists" by building solar-powered diode testers or voice-activated disco strobe lights. Instead they swap pirated software or play games on the school's Macs or Apple IIs.

America's bias toward software should concern our nation's computer manufacturers. Not only does this trend reduce the potential number of design engineers, it lowers the quality of such professionals. People ought to get into the hardware end of the computer business because they love the idea of designing, building and creating, not because they couldn't find anything better to do.

Companies and users groups sponsor all sorts of school software competitions. Most of these exercises appear to be aimed at cultivating virus programmers. So why not sponsor a hardware design contest?

Would it hurt Apple to encourage schoolchildren to devise ingenious new expansion boards, input devices or display technologies? No company makes a lot of money by building peripherals for the handicapped. A contest that asks schools and students to create new and innovative computer products for the disabled would be a natural. It would also make for great public relations.

As we continue our headlong rush into the Information Age, we must not forsake our heritage. Much of our nation's greatness can be traced to the inventors and tinkerers who launched our current technological revolution.

Thomas Edison is remembered for creating the phonograph, not the music on the record. ☐

Polishing Apple's reputation in the education market

Katie Povajsil of the Apple higher-education group: "We're in the process of revamping the way we approach the [education] development projects. ... We'll be looking for proposals for new teaching models that use the computer to teach writing."

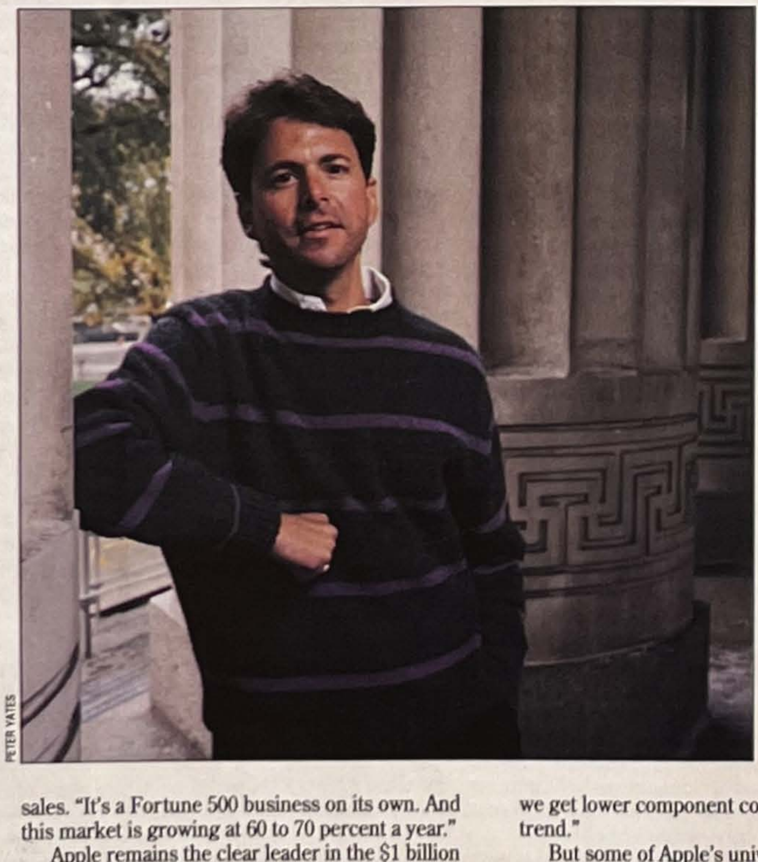
JOHN HARDING

BY ELINOR CRAIG

CUPERTINO, Calif. — Bud Colligan, director of marketing for higher education at Apple, put down the phone shaking his head. He had just fielded the second phone call in as many days from customers who needed his reassurance.

The callers, already nervous about Apple's commitment to the education market in light of the company's push to attract business customers, were worried that two recent reorganizations at Apple might mean a further de-emphasis of education. In addition, the introduction of the university-targeted NeXT Computer System brought up questions about Apple's product strategy, even though in the coming year Steve Jobs' machine will be shipping only a small fraction of what Apple sells to customers in higher education.

"Education is not a no-man's land at Apple," said Colligan, frustrated at suddenly having to defend a group that pulls in 35 percent of Apple's national sales. "It's a Fortune 500 business on its own. And this market is growing at 60 to 70 percent a year."



Gregg Weiss of the University of Michigan: "[Because of the recent Mac price increases], it is my personal opinion that [education] orders [to Apple] are going to fall off."

PETER YATES

Apple remains the clear leader in the $1 billion university market, according to market research company Dataquest Inc. of San Jose, Calif. Last year Apple sold 35 percent of the estimated 531,000 personal computers purchased by universities, colleges, and university and college students. The potential market is huge; Apple estimates that there will be 12.6 million students of higher education next year, with 1.7 million faculty, staff and administrators.

However, education has been shuffled twice in internal reorganizations here the past two months. In August, Apple Education became an independent operating division under former Chief Operating Officer Delbert Yocam, only to be folded into Apple USA Marketing earlier this month in another reorganization. The moves led Stewart Alsop, editor of the PC Letter of Redwood City, Calif., to say: "If I were an educator who depended on Apple in the past, I'd be worried."

What's more, the most recent reorganization of higher education's position at Apple came only days before Jobs' glitzy NeXT introduction in San Francisco (see MacWEEK, Oct. 18) and less than a month after Apple announced price increases for the Mac II, Mac SE and Apple IIGS.

Colligan said he was withholding judgment on the potential impact of the price hikes "until the end of the second quarter" in March and preferred to emphasize "the downward trend in prices that has characterized the past few years." He added, "I can only hope that as we get lower component costs, we will continue that trend."

But some of Apple's university customers are not waiting until March to weigh in. "Apple will have to demonstrate that it is costing the same percentage increase it is handing over to the universities, or the buyers will be outraged," said Ken King, president of the powerful university consortium EDUCOM. Ronald Weissman, acting assistant to the president at the University of Maryland in College Park, said: "I'm very disappointed. I had been hoping that Apple would create a lower-end machine, in the $700 to $800 range. Apple's pricing seems to be moving in another direction."

With the price increases, of course, could come a decrease in orders. Gregg Weiss, microcomputer sales manager for the University of Michigan, said, "It is my personal opinion that orders are going to fall off." Weiss added that because of the price hikes, he expects to move away from Apple products wherever possible. "We can use third-party vendors to lower the total costs, especially for memory," he said.

"Apple has real momentum," said David Grady, editor and publisher of the Grady Report on computers in education. "If the company had lower prices, it would have more than half the university personal computer market."

Whatever the outcome, offending the university market is the last thing Apple has wanted to do in the past. The company has courted the education market since before the Mac hit the streets, and then played Johnny Appleseed by planting the Macintosh in the rich soil of America's youth. "We developed a partnership with the universities," said Colligan, "that extends far beyond just providing a box."

The partnership, started in 1983 with the establishment of the Apple University Consortium, or AUC, began with 25 schools. Today the AUC has grown to 32 institutions, and two higher-education programs have been created as additional structures to extend Apple's sphere of influence in higher education. The company now deals with 3,200 schools, funding Mac courseware-development projects and offering purchasing programs with discounts of up to 40 percent.

As part of the development projects, a participating school is provided with one or all of the following: funds, equipment, staff, management and technical support. In return, students and faculty at the institution develop courseware and hardware, as well as software designed to link the Mac to campuswide systems.

The projects range from the relatively simple Prose courseware, a teaching composition program developed at Drexel University in Philadelphia, to the authoring kit developed at Stanford University of Stanford, Calif., that has produced such gems as the Science for Living, a multimedia interactive video program on the biology of the human body.

In addition, some schools fund their own Mac development projects without seed money from Apple. Steve Fienberg, dean of the college of humanities and social sciences at Pittsburgh's Carnegie-Mel-

See APPLE, Page 20

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- ☐ 03. Systems House/Data Processing
- ☐ 04. Manufacturer (Computers, Software, Peripherals)
- ☐ 05. Consultant

Non-Computer Related
- ☐ 10. Aerospace
- ☐ 11. Architecture, Engineering
- ☐ 12. Research & Development
- ☐ 13. Graphic Arts
- ☐ 14. Communications: Publishing, Advertising, Public Relations, Promotion
- ☐ 15. Government: Federal
- ☐ 16. Government: Non-Federal
- ☐ 17. Manufacturing
- ☐ 18. Education
- ☐ 19. Finance: Banking, Accounting, Insurance, Real Estate
- ☐ 20. Health, Medical, Legal
- ☐ 21. Retail, Wholesale, Distribution
- ☐ 22. Agriculture, Mining, Construction, Oil
- ☐ 23. Transportation, Utilities
- ☐ 97. Consultant: Non-Computer Related
- ☐ 99. Other Businesses & Services (please specify) ____________

2 Your Professional Title (check one only):
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- ☐ C. Controller/Treasurer
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- ☐ F. Art Director/Graphic Designer/Artist/Illustrator
- ☐ G. Manager/Supervisor (not listed above)
- ☐ H. Architect/Engineer
- ☐ I. Systems Analyst/Programmer
- ☐ J. Consultant/Advisor
- ☐ K. Scientist
- ☐ L. Educator
- ☐ M. Editor/Writer
- ☐ N. Professional (Doctor, Lawyer, etc.)
- ☐ O. Accountant
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3 Your department/function at this location (check one only):
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- ☐ C. Communications/Publishing/Public Relations
- ☐ D. Art/Creative Design
- ☐ E. MIS/DP/Information Systems
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- ☐ H. Administration/Management/Personnel
- ☐ I. Accounting/Finance
- ☐ J. Education/Training
- ☐ K. Science
- ☐ L. Consulting
- ☐ Z. Other (please specify) ____________

4 If your firm's primary business at this location is retailing, reselling or consulting, how many Macintoshes are (answer one only):
- ☐ A. Retailer: sold per year ____________ (specify quantity)
- ☐ B. Reseller: resold per year ____________ (specify quantity)
- ☐ C. Consultant: purchased by your clients through your firm's recommendations per year ____________ (specify quantity)

5 Indicate how many employees there are in your entire company (check one only):
- ☐ 01. 1000 or more
- ☐ 02. 100-999
- ☐ 03. Under 100

6 Please indicate the quantities of the computers currently owned and/or planned for purchase within 1 year at this location:
(Write in accurate quantity for all that apply)

	Currently Owned (Quantity)	Plan to Buy (0-12 Months) (Quantity)
01. Macintosh II		
02. Macintosh SE		
03. Macintosh Plus		
04. Macintosh (Other)		
05. IBM/Compatible Micro		
06. Other Micro		
07. Workstation (e.g., Apollo, Sun)		
99. Other		

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NAME
TITLE
COMPANY NAME
DIVISION TELEPHONE NUMBER
STREET ADDRESS
CITY STATE ZIP

7 Please check the Mainframe(s) or Minicomputer(s) at your location (check all that apply):
- ☐ 01. DEC
- ☐ 02. IBM
- ☐ 03. Other
- ☐ 09. None

8 How many Macintoshes do you personally help purchase, specify, recommend or approve the purchase of? (check one only)
- ☐ 01. 500 +
- ☐ 02. 100-499
- ☐ 03. 50-99
- ☐ 04. 20-49
- ☐ 05. 10-19
- ☐ 06. 4-9
- ☐ 07. 1-3
- ☐ 09. None

9 Check all the Macintosh/Compatible products and services in which you are actively involved in purchasing, recommending, specifying or approving:

Computers
- ☐ 01. Micros (Personal)
- ☐ 02. Workstations
- ☐ 03. Minis, Mainframes

Connectivity
- ☐ 10. Local Area Networks
- ☐ 11. Modems
- ☐ 12. Micro/Mini/Mainframe Links
- ☐ 13. Communications Software

Peripheral Equipment
- ☐ 20. Laser Printers
- ☐ 21. Color Printers
- ☐ 22. Color Monitors
- ☐ 23. Hard Disks
- ☐ 24. Backup Systems
- ☐ 25. Plotter, Charting Devices
- ☐ 26. Scanners

Add-in Boards
- ☐ 40. Memory Boards
- ☐ 41. Graphic Boards
- ☐ 42. MS DOS Boards
- ☐ 43. Ethernet Boards

Software
- ☐ 50. CAD/CAM
- ☐ 51. Graphics
- ☐ 52. Desktop Publishing
- ☐ 53. Desktop Presentation
- ☐ 54. Database
- ☐ 55. Programming
- ☐ 56. Accounting, Payroll
- ☐ 57. Spreadsheets
- ☐ 58. Music
- ☐ 59. Project Management
- ☐ 60. Word Processing
- ☐ 61. Utilities

- ☐ 99. None

10 Please indicate the communications capabilities that the Macintoshes at your location have (check all that apply):
- ☐ 01. Local Area Network
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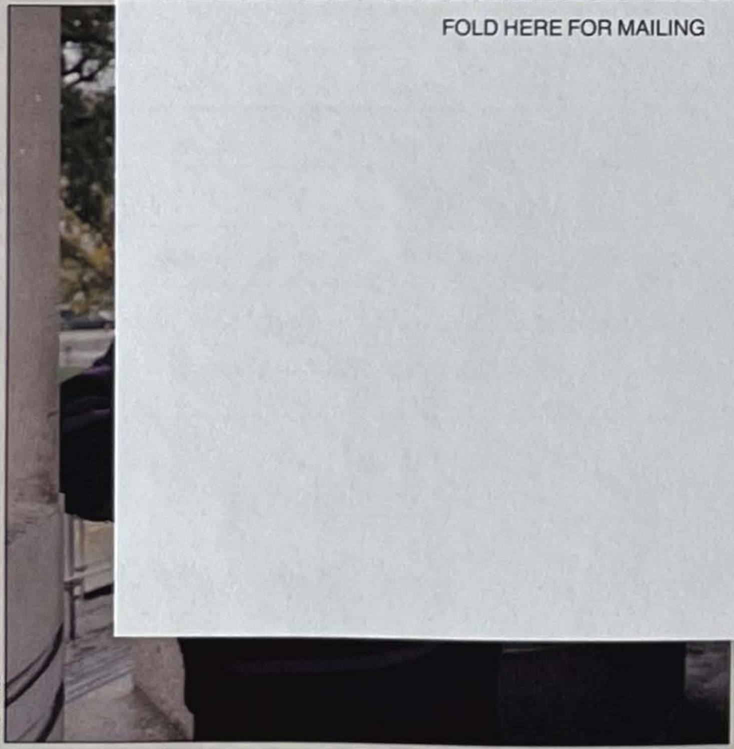
PETER YATES

sales. "It's a Fortune 500 business on its own. And this market is growing at 60 to 70 percent a year."

Apple remains the clear leader in the $1 billion university market, according to market research company Dataquest Inc. of San Jose, Calif. Last year Apple sold 35 percent of the estimated 531,000 personal computers purchased by universities,

downward trend in prices that has characterized the past few years." He added, "I can only hope that as we get lower component costs, we will continue that trend."

But some of Apple's university customers are not waiting until March to weigh in. "Apple will have to demonstrate that it is costing the same percentage increase it is handing over to the universities, or the buyers will be outraged," said Ken King, president of

institution develop courseware and hardware, as well as software designed to link the Mac to campuswide systems.

The projects range from the relatively simple Prose courseware, a teaching composition program developed at Drexel University in Philadelphia, to the authoring kit developed at Stanford University of Stanford, Calif., that has produced such gems as the Science for Living, a multimedia interactive video program on the biology of the human body.

In addition, some schools fund their own Mac development projects without seed money from

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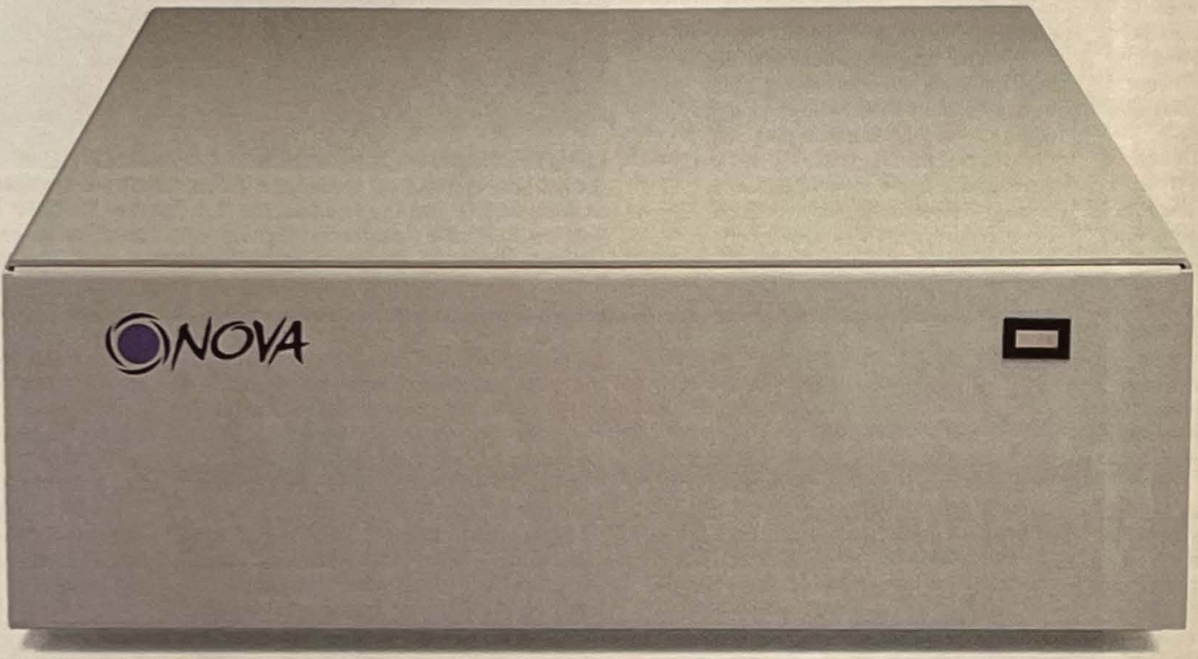

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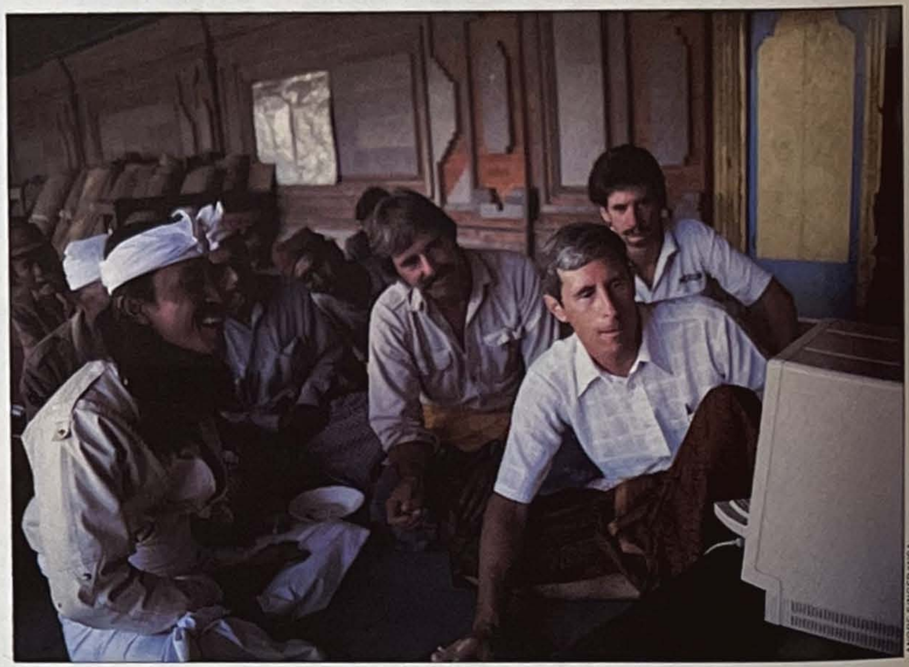
The Goddess and the Computer

HyperCard simulation corroborates traditional, priest-led Balinese water management system.



ANDRE SINGER/INCA

Giving new dimensions to the word "icon," a Macintosh SE runs a model simulation of the Balinese hydrological system at a temple devoted to the water goddess Dewi Danu, as Balinese officials; The Jero Gde, the High Priest of the Water Temple; and University of Southern California researchers Steve Lansing, James Kremer and Kevin Arrigo watch. Results of the simulation are returned to HyperCard for display and analysis.

BY ELINOR CRAIG

LOS ANGELES — In mist-covered mountains on the South Pacific island of Bali, high water priests, with mouse in hand, are balancing Mother Nature and the human race.

Thanks to the work of several University of Southern California instructors, HyperCard and Balinese officials, water management and planting schedules are being coordinated to save a delicate ecological system in Bali.

The Goddess and the Computer is a simulation model, run on the Macintosh, of the traditional Balinese hydrological system. This system is organized through an ancient network of water temples and a priesthood that serves as liaison between farmers and deities who are believed to control the water.

The traditional system is one of the planet's most stable and productive, producing two rice crops a year while carefully balancing the natural control of pests and optimal use of water. "Even so, modern irrigation experts thought the ancient temple system was mere religious nonsense," said Steve Lansing, associate professor of anthropology at USC. Lansing used the simulation to contrast the modern methods of irrigation — damming, planting three crops a year and using hybrid rice plants — against the water temple system and concluded that the ancient methods produce more and healthier crops.

The simulation, constructed at USC by Lansing; Jim Kremer, associate professor of biology; and Tyde Richards, director of software development for the Center for Scholarly Technology, consists of three functional components: hydrology, rice growth and pest control. It is based on an extensive database of all three components from Balinese records of rainfall and river flow, plus scientific literature on rice agriculture.

Scenarios combining various patterns of rainfall, irrigation demand and planting strategy can be selected in Balinese, Indonesian and English. The computed results are then returned to HyperCard for display and analysis. The results are shown in various formats, superimposed upon backgrounds relating the output to the local geography with pictorial screen images and maps of the region.

This combination of graphics and data is not new to USC. The university was seeded with HyperCard as a Mac development project by Apple's higher-education group last year. Project Jefferson, the first interface prototype developed on the campus, is the beginning effort toward a complete library database interface that may restructure student research techniques.

The Bali project, currently being used in pilot form in a small part of the island, has caught the attention of Balinese government officials, who are considering buying Macs and extending the simulations to the whole island.

"The fear was that we would waltz in with technology and the Balinese would see it for more than what it is," said Kremer. "Fortunately, they asked intelligent questions that showed they understood technology was not going to solve all their problems."

What the technology has shown is that the 2 million people who live on Bali are well-cared for by Dewi Danu, the goddess of the lake and the source of all the water that irrigates the rice paddies of this small South Pacific island. Dewi Danu seems pleased to incorporate modern technology into the system her dedicated priests manage. □

APPLE

Continued from Page 18

lon University, an AUC school, said there are Mac-oriented development projects in virtually every one of his departments and that only a few of the projects were seeded by Apple.

The development projects, along with the discounts and the personal attention of Apple field representatives, have created a bond between Apple and its university clients, a bond typified by Fienberg. "We've made a short-term decision to be principally Mac for all of our undergraduate educational-computing activities," said Fienberg, who added that he plans to introduce Mac IIs in all the university's core courses. "We have to wait to see certain things unfold, such as faculty software development and what other machines are introduced next year. But there is a basic set of tools needed, such as memory space and software possibilities with HyperCard, that only the Mac II could provide."

And the University of Maryland's Weissman, his disappointment with the price increases notwithstanding, said, "We have a wonderful relationship with Apple. The personally involved and enthusiastic staff makes Apple unique."

Colligan is confident that this uniqueness will give Apple the edge in the growing competition for the university market. "I'm glad [NeXT] is introducing," he said. "I'd like a little more competition in the market. [NeXT] delivered a credible workstation, and when it ships there will be responses from competitors. But both Sun and NeXT will only compete with us at the margins. We may not have the hottest box in town for six months, but people buy our machines for other reasons" — like the development projects.

Even as Colligan touts the development projects as a key to its success in the university market, Apple is cutting in half the number of projects it plans to fund, from 200 to 100. "We're in the process of revamping the way we approach the development projects," said Katie Povajsil, director of solutions in the Apple higher-education group. "In the past we funded many things in hopes that some small percentage would pay off and become generalizable models that could be used on many campuses. But the volume of requests for funds and equipment has gotten so enormous that we're only going to fund what we can manage." While she would not disclose a precise dollar figure for the development projects, Povajsil maintained that Apple will spend more on the 100 projects in 1989 than it did on the 200 projects in 1988.

Apple plans to focus the 1989 development projects in five areas: multimedia, simulations, numerical tools, collaborative writing, and interfaces into information systems for administrative databases and library systems. In terms of academic subject areas, the company is directing its marketing efforts at students in English, computer science, engineering and business.

"We'll be looking for proposals for new teaching models, or interactive programs, that use the computer to teach writing," said Povajsil, referring to the numbers of first-year college students that crowd into writing courses. "By targeting English, you get the freshmen early, and English has connections to other departments of liberal arts. We chose business because 27 percent of the students are majoring in business now." Computer science and engineering were chosen for their strong influence on purchasing decisions made by other departments in the college.

While university buyers have given the higher-education group at Apple a glowing report, they have also made it clear that their brand of loyalty can be shaken. According to many buyers, better courseware is critical if they are to continue to stay with personal computers.

"I think every vendor is faced with the software issue right now," said Colligan. "No one has great solutions in all the areas, because outside of academia, there isn't a commercial market for the software."

To remedy that situation, Apple plans to examine how commercial software can get more activity in the basic areas of education. And, Colligan said, Apple will continue supporting the EDUCOM Software Initiative, a subgroup of EDUCOM that is working in areas such as piracy, distribution and rewards for faculty software authors who get little credit or compensation for their time spent.

And to further penetrate the higher-education market, Colligan said he intends to reach out to smaller schools by starting a rotating community college advisory board. The interests of community colleges, he said, are very different from those of research universities: Money is tighter at community colleges, there are more vocational courses, and the emphasis is more on instruction than experimentation.

But what of Apple's longtime university clients, those who look warily at the recent internal moves at Apple and at the decreased number of development projects? "I would be concerned if there comes to be a separation between higher education and product development at Apple," said analyst Grady. "There has to be more concern on Apple's part with meeting education's needs."

Apple's Bud Colligan: "I'm glad NeXT is introducing. I'd like a little more competition in the market."

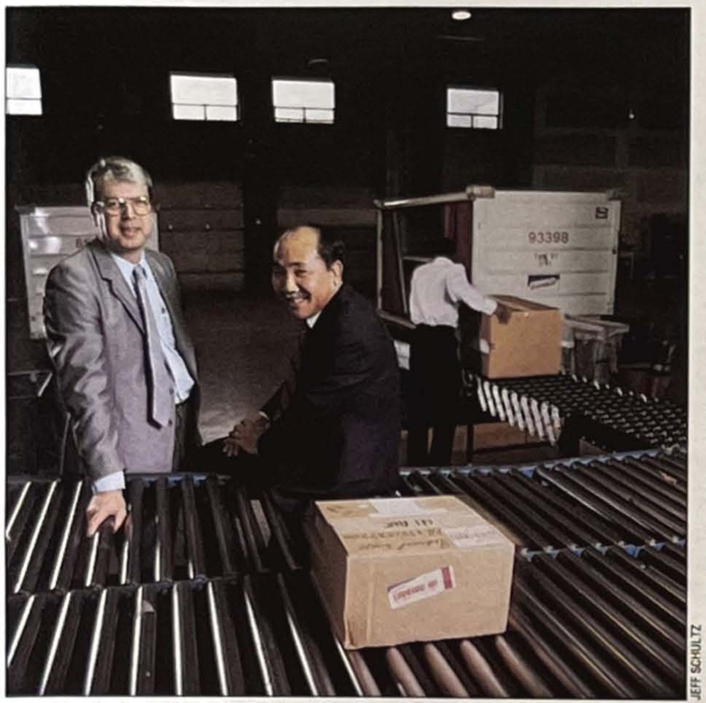
Colligan insisted that Apple will not forsake its fans on university and college campuses. "Listening to what the educators say they want is what drives our direction," said Colligan. He pointed to the architecture of the Mac II and the structure of HyperCard as two examples of how higher education has directed Apple's development efforts. According to Colligan, the NuBus structure on the Mac II was altered in response to the networking needs at the institutions where it was beta tested, and HyperCard was totally debugged at Stanford, where major changes were made in the interactive video interface and animation capabilities.

"This is a partnership," Colligan said of Apple's relationship with its higher-education clients, "and we're not interested in a short-term relationship. Our basic strategy is pretty simple: Speak their language, listen to them, and do it better than anyone else."

With NeXT on the market and Macintosh prices on the rise, that ability to do it better than anyone else will surely be tested in the coming months. □

Trying to heat up Alaska's economy

Through the University of Alaska's Information Exchange database, Macs are providing Alaskans with information that may help them to diversify their economy.



Dave Van Amburg (left) and John Kim developed the ACIB Information Exchange.

JEFF SCHULTZ

BY ELINOR CRAIG

ANCHORAGE, Alaska — The 1980s have not been as sweet to this state as were the 1970s. The oil boom that brought millions of dollars to the last frontier has leveled off, and now, in the wake of the oil bust, many Alaskans are looking for new business opportunities.

According to John Kim, executive director of the Alaskan Center for International Business (ACIB) at the University of Alaska here, economic diversification is the key to the state's recovery. Together with Apple sales representative Dave Van Amburg, Kim has developed the ACIB Information Exchange to provide residents with increased economic and business opportunities.

The Information Exchange consists of a massive database, run on the Macintosh on Oracle from Oracle Corp. of Belmont, Calif., of both current and historical financial and economic statistics, exchange rates and interest rates, and consumer and commodity prices of interest to Alaskan entrepreneurs.

Although the Information Exchange clearly is aimed at stimulating business prospects for Alaskans, it is also designed to be a resource to scholars and students at the University of Alaska. The project, which is still in a pilot phase, pre-dates any relationship the university had with Apple. But when Van Amburg came on board as an Apple sales representative in November 1987, he saw an opportunity to combine the needs of the university with his goal of selling computers, especially to business.

Van Amburg convinced Apple to provide a Mac II, six SEs and six LaserWriters for the project and also to donate five Mac IIs to Gov. Steve Cowper. The governor is expected to give machines to libraries on the three University of Alaska campuses as well as to small-business development centers that support the Information Exchange but are not connected to the university.

When the Information Exchange project is completed, the 3-Gbyte database will also include production and consumption information on natural resources in Alaska and, pending an agreement with the East-West Center of Hawaii, all around the Pacific Rim. The plan is for businesses and schools around the Pacific to be able to tap into the database for information about Alaska.

Putting a finger on the business pulse of the Pacific Rim is designed to pull Alaska into the competitive arena by making crucial information available at the click of a mouse. "Alaska is not well-known in the countries of the Pacific Rim," said Kim, "or even in the Lower 48. They think we're living in igloos."

A glimpse at how the Information Exchange can be used to bridge the information gap is provided by its current data from China. The exchange receives data on what Chinese consumers are buying in the stores, where they are buying and how much of their income they are spending.

Begun in October 1987 and introduced to the Alaskan public this year, the Information Exchange fulfills a pledge by Gov. Cowper to establish a trade information system. Ultimately, students, researchers and entrepreneurs will be able to access the database from homes, schools and offices. Currently, in its pilot phase, the Information Exchange is available only on campuses and selected government offices. "By pilot phase," explained Van Amburg, "we mean only that features will still be added." Full implementation is expected in about 12 to 18 months.

The type of categories available to users includes business opportunities, profiles of Alaska's trading partners, and news about seminars or information about specific Alaskan commodities, such as fish, timber and minerals. A country profile button provides an animated globe revolving in a corner of the screen. Clicking on Japan reveals a map of the country, key population centers and an update on the economic situation.

Information for the impressive database will come from research conducted by ACIB, other universities, the U.S. Department of Commerce, other governments, the World Bank and the International Monetary Fund.

"My crusade is for Alaskans to do better in international trade," said Kim, "to become more competitive in the global market. With the information on the database, we can provide international export trade opportunities."

"I'm trying to bring to this project a communication between the university language and the entrepreneurial spirit," Van Amburg said. "The focus is to deliver information that exists into the hands of someone who will go out and do something with it." □

Learn French by counseling lovelorn Philippe

Stanford ports French teacher to Mac

BY ELINOR CRAIG

STANFORD, Calif. — The camera zooms in on Philippe's unhappy face as he explains the dilemma in the language of his native country, France.

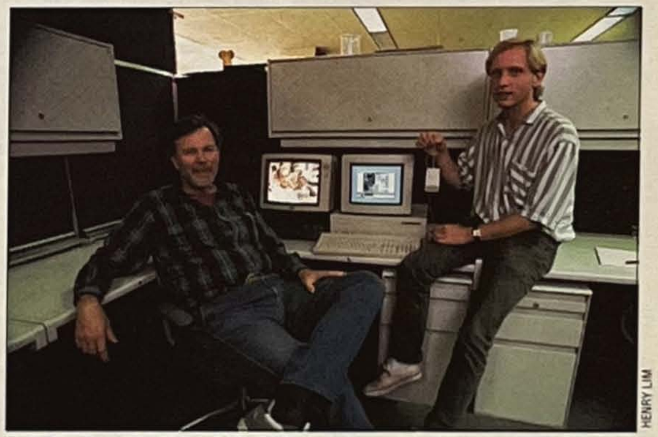
Looking out from a cafe in the Parisian neighborhood of St. Gervais, Philippe laments the fact that his girlfriend, Elisabeth, has just kicked him out of their apartment. Desperate, he turns to the viewers watching him on the video screen, pleading for help.

A French soap opera? *Mais non!* Lovesick Philippe is part of the new wave in computer-aided language study. By typing suggestions or answers in French into a Mac connected to the video screen, students at Stanford University here can help Philippe get a new job, find an apartment and possibly patch up his affaire du coeur with Elisabeth.

Direction Paris, as the program is called, is a pilot Macintosh project aimed at intermediate-level French students. The program originally was developed in the spring of 1983 at the Athena Language Learning Project of the Massachusetts Institute of Technology in Cambridge, Mass., and was designed to run on a MicroVAX II and an IBM RT. Here at Stanford, a team headed by Charles Kerns is porting the program to the Mac.

Direction Paris is one of several Macintosh development projects at Stanford's Lab for Authoring Multimedia Programs (LAMP), which is funded by Stanford and Apple. The program is an interactive two-part conversation-based series of exercises that allows the student to follow various corridors of possibilities for Philippe's life. His fate is at the user's finger tips.

The first part of Direction Paris is a narrative in which the student meets Philippe and becomes acquainted with his predicament. To give Philippe advice on how to find work and a new place to live, the user can search the apartment Philippe shared with Elisabeth to learn more about Philippe's life, listen to his telephone answering machine, and go to shops and cafes to look for posted announcements.



Charles Kerns (left) and Kevin Hornbaker with their program Direction Paris, in which Philippe seeks help with his love life.

HENRY LIM

The second part is a documentary in which videodisc images are seen on the video screen, allowing the user to explore a map of St. Gervais and hear from people who live and work there. Among the residents is Philippe's neighbor the lute maker, who decries the gentrification that has left him as one of the few artisans on the block.

On the Mac screen, the user sees room layouts, neighborhood maps and written breakdowns of the French sentences and words being used by the characters on the video screen. At first, the student sees just the keywords in each phrase, perhaps two or three at most. But by clicking the mouse, the student can get the complete phrase — over and over again, if necessary.

The extra bit of effort it takes to get the entire sentence is not an accident. "The developers wanted to make it harder for the student to get to the text so that he or she would depend on the actual dialogue instead of translating back into English," said Kevin Hornbaker, an engineering student who helped program Directions Paris and several other multimedia projects at Stanford.

Kerns said the program is being ported to the Mac because "the Mac and video equipment are within our economic range. The equipment used at MIT is very expensive." Now, said Kerns, "we plan to continue with our own faculty, augmenting the French version and developing programs in other languages."

That's logical enough because the program's genesis is with educators. "The instructors were starting not with technological constraints but with educational demands," said Janet Murray, director of the language project at MIT. "We are very interested in the Macintosh as a delivery vehicle because it greatly increases the number of people who can use the program."

The professors who pushed for a program like Direction Paris "wanted conversations," said Murray. Now, with students at Stanford typing instructions into their Macintoshes in French, they're getting those conversations, *bien sûr*. □

Fun with FontLiner

BY LASLO VESPREMI

I think it's time for a break. Sometimes it feels like computer graphics are getting too technical, especially with new programs and pre-press innovations emerging on an almost daily basis. So I took this occasion to introduce a new piece of software that's as entertaining as it is useful: FontLiner from Taylored Graphics of Freedom, Calif.

Taylored's first product, Xriss-Xross, was a utility application that translated art created in MacDraw or PICT format into Adobe Illustrator files. The company's new product, FontLiner, extends this translation ability into a new area: laser fonts. In effect, it allows users to open up hundreds of PostScript fonts from various companies and turn them into Illustrator files. These files can then be opened and edited in the original Illustrator, in Illustrator 88 or in Aldus FreeHand.

One word of caution: FontLiner was designed to open fonts that are compatible with Fontographer, Altsys Corp.'s font generator. It will not convert Adobe, Apple or Bitstream fonts. A list of fonts it will convert is included at the end of this article. I used two fonts from T/Maker and Matrix, a font developed by Zsuzsanna Licko of Emigre Graphics, to create the four images on this page.

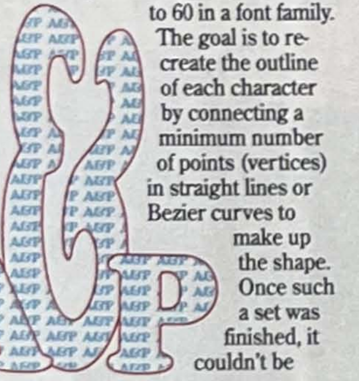


Fig. 2

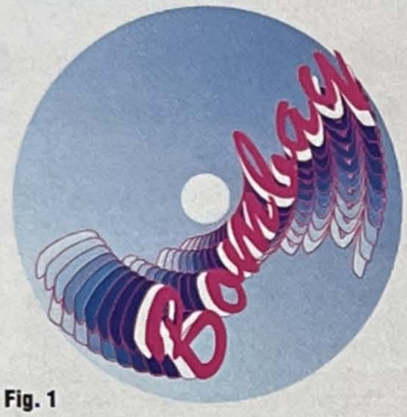
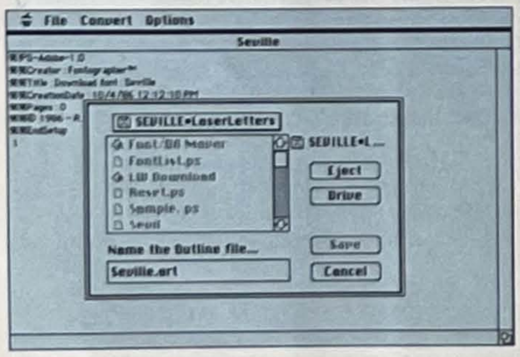


Fig. 1

Creating laser fonts is time-consuming. It takes highly trained designers hours to trace just one character of the 50 to 60 in a font family. The goal is to recreate the outline of each character by connecting a minimum number of points (vertices) in straight lines or Bezier curves to make up the shape. Once such a set was finished, it couldn't be changed — that is, not until FontLiner arrived.



```
%!PS-Adobe-1.0
%%Creator: Fontographer™
%%Title: Download font: Seville
%%CreationDate: 10/4/86 12:12:10 PM
%%Pages: 0
%%DID 1986 -A
%%EndSetup
1
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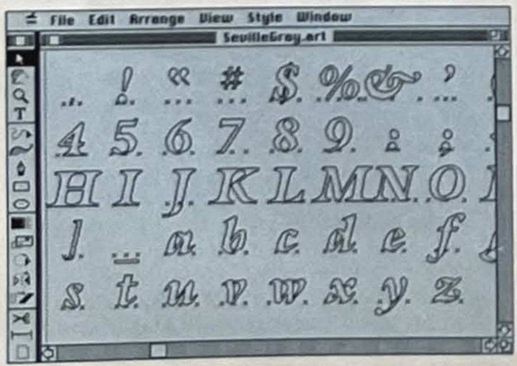
Font/88 Maker
FontList.ps
LW Download
Reset.ps
Sample. ps
Seoul

Name the Outline file...
Seville.art

Screen 1



Screen 2

Here's the beauty of FontLiner: It puts a wealth of fonts at the graphic designer's finger tips to enhance, change or just have fun with. The procedure is straightforward. When you open FontLiner, a dialog box asks you to call up a laser font. Once that font has been called up (Screen 1), FontLiner usually takes less than a minute to convert it into an Illustrator file that you can open in Illustrator 88 (Screen 2).

The circular logo (Fig. 1) was created with Bombay, a T/Maker font. I opened the translated file in FreeHand and, after setting the word "Bombay," I spun the logo around using the "clone" and "duplicate" features.

To test fonts with PostScript fills, I created the next logo (Fig. 2) from a translated T/Maker Plymouth font, which I opened in Illustrator 88. After resizing the letters, I was able to create a PostScript fill to use inside the letters "A & P." Needless to say, it would have taken many hours if I had traced the letters instead of using FontLiner.

Fig. 3 was created to test graduated fills within an outline. The font I used here was Matrix .

The real power of FontLiner is apparent in Fig. 4. To create this design, I used the Seville "A" (on the left), and an "A" I designed (on the right) to design a new font using the Blend tool, which creates "in-between" fonts from two existing ones.

Can you use this new font legally? While there was a recent ruling against copyright-protecting fonts (see MacWEEK, Oct. 11), there is still some controversy surrounding this issue. ☐

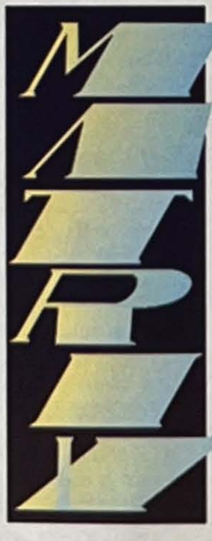


Fig. 3

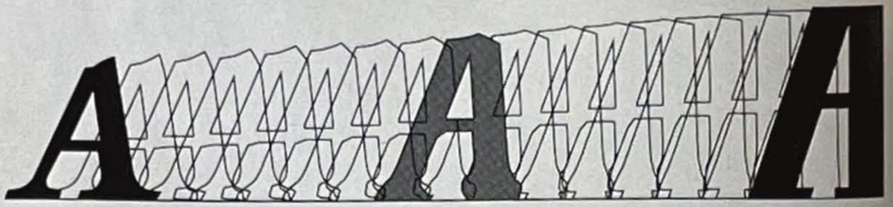


Fig. 4

ART BY LASLO VESPREMI

Fonts compatible with FontLiner: M/A Prospera Font by Alphabets Inc. of Evanston, Ill.; Fontographer Fonts by Altsys Corp. of Plano, Texas; 20+ Fluent Laser Fonts by CasadyWare of Carmel, Calif.; Laser Genix Fonts by Devonian International Software Co. of Montclair, Calif.; Professional Laser Fonts by EmDash of Northfield, Ill.; Faces Collection by Invincible Software of San Antonio, Texas; 100+ Laser Fonts by Image Club Graphics Inc. of Calgary, Alberta; Full Foreign Fonts by Linguist's Software of South Hamilton, Mass.; 17+ "Laser Perfect" Fonts by Neo-Scribe International Inc. of East Haven, Conn.; Complementary Type by Software Complement of Matamoras, Pa.; and ClickArt Laser-Letters by T/Maker of Mountain View, Calif.

FontLiner sells for $69.95. Taylored Graphics can be reached at P.O. Box 1900, Freedom, Calif. 95019; (408) 761-2481.

BOLDFACE

Book larnin', part two

BY EZRA SHAPIRO

For the past few weeks I've been reading books that purport to enlighten the desktop publishing neophyte in the ways of graphic design. I can make only two enthusiastic recommendations: Advil for headaches and Tums for stomach acid. I have been driven to frequent use of both products, and I am living proof of their effectiveness.

I don't have much good to say about the books that produced these physical manifestations: They range from merely acceptable at the top all the way down to unbelievably rotten at the bottom end. I remain convinced that if you want to learn about design, you should get a general book on design and pick up computer knowledge from your software manuals. If you want to learn about desktop publishing, buy Michael Kleper's excellent "Illustrated Handbook of Desktop Publishing and Typesetting" (TAB Books), a huge encyclopedia that details both general technology and hundreds of products. If you must combine the two, plan to stock your medicine chest.

My only real endorsement is "Graphic Design for the Electronic Age" (Xerox Press) by Jan White. I've been skeptical of White ever since I read one of his Graphic Idea Notebook pieces that suggested cutting up dull photographs to make them more interesting, but this time he's taken a more conservative and satisfying approach. The book is conversationally written, good-looking, and covers both the history and fundamentals of graphic design. It's a nice introduction for the novice, although it's heavier on background than on practice. Unfortunately, there's no discussion of the unique problems posed by desktop publishing software and output devices, just a brief explanation of digitized type, a number of items in a glossary and some entries on a historical time line. That's it. White is an engaging and prolific writer, but I suspect the title was slapped on this book merely to sell a rehash of earlier material to a new market.

In Roger Parker's "Looking Good in Print" (Ventana Press), the tone is so didactic that the only thing missing is a "thou shalt" in front of each of his italicized suggestions. As opposed to White, who encourages freedom and experimentation, Parker promulgates laws. He doesn't waste much space on history, but plows into typical desktop publishing project categories like newsletters, magazine ads, brochures and business correspondence. If you can stand Parker's strident commandments, there's a lot of material here directly related to the real world. None of his examples are particularly awe-inspiring, but Parker's points are well taken and the book fills a need for those readers who want firm direction.

"Design for Desktop Publishing" (Chronicle Books) by John Miles covers the basics of type and design, but it doesn't add much to White's treatment. Again, there's scant reference to today's technology, and what there is of it is so obvious as to be painful. The book is hideously laid out in two colors, and the illustrative material is embarrassing. Enough said.

Take a bunch of existing information about typefaces, clip art and the use of the Mac for desktop publishing, mix with an eggbeater, and you'll have "Desktop Publishing Type & Graphics" (Harcourt Brace Jovanovich) by Deke McClelland and Craig Danuloff. Ugly? You bet. Useful? Not on your life. The book is strewn with samples of clip art, examples of type and leading, a table of font IDs, ASCII translation tables for a few bit-mapped dingbat fonts, bits and pieces of typesetting trivia, and a lot of garish layouts. Why does this book exist? It seems intended as a book-length ad for the authors' desktop publishing company, but if this is the best they can offer, I wouldn't patronize their shop.

Tom Lichty, author of "Design Principles for Desktop Publishers" (Scott, Foresman), seems to know what he's talking about, but his language is academic and ponderous. An example is this quote: "Use illustration whenever ultimate quality and flexibility are required. They cannot equal the tonality of true photography or the convenience of scanned images, but their distinctive appearance and indigenous suitability to the desktop publishing environment warrant consideration." OK. Sure. Right. Get out the antacid. I'll grant that Lichty does a decent job of applying his concept of design to the realities of today's technology, but his examples are less than overwhelming, and the book itself is unattractive. The whole work reeks of desktop publishing, and I mean that in the worst possible sense — typefaces that don't harmonize, heads and takeouts that are a little too bold, and that unmistakable fuzziness. The cover art is the most appealing of any of the books in this group, but there's a classic axiom about books and covers, isn't there? ☐

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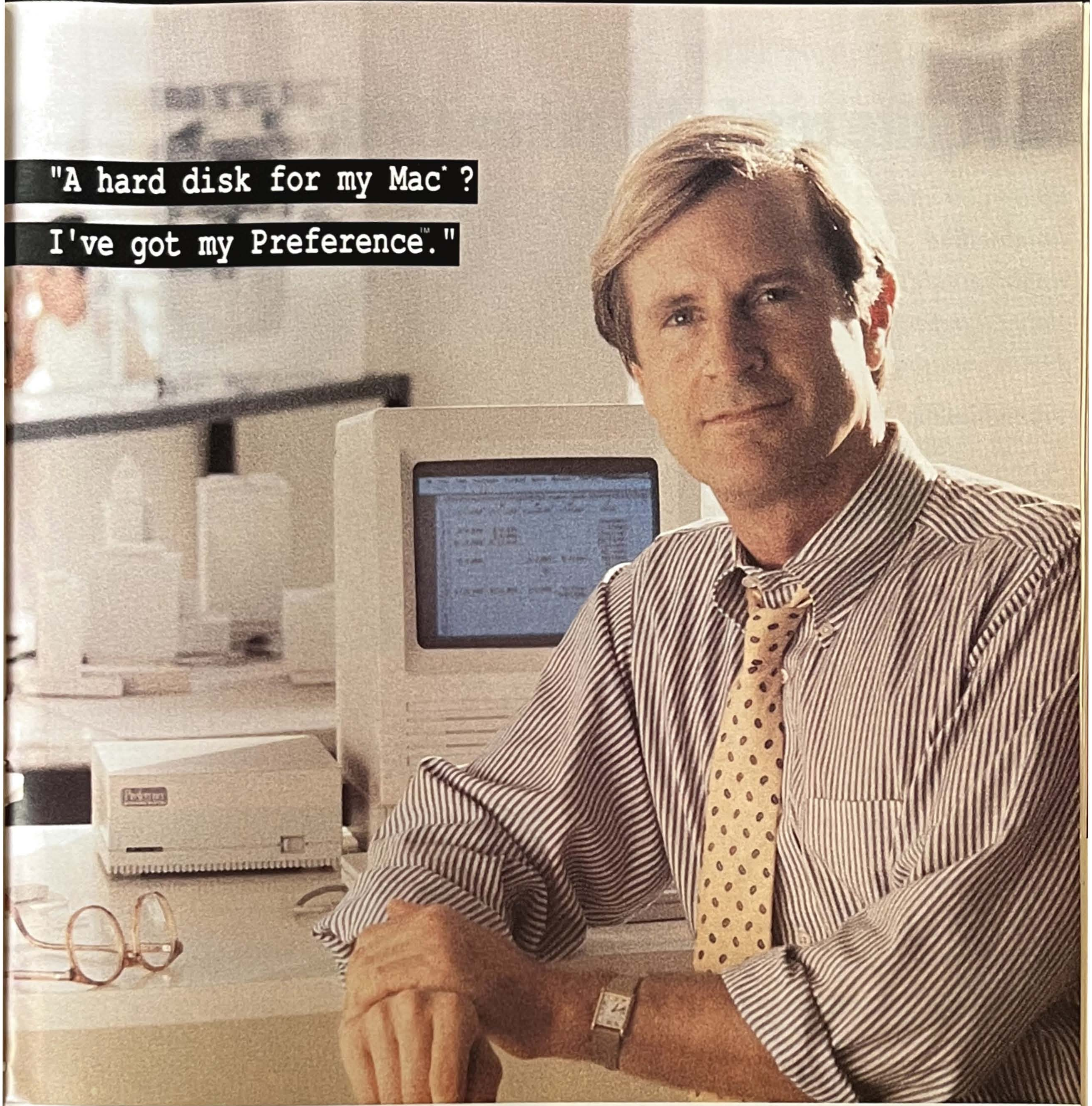

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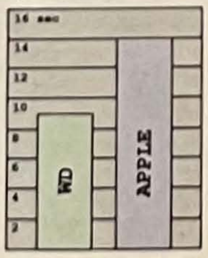

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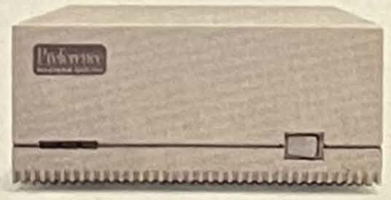

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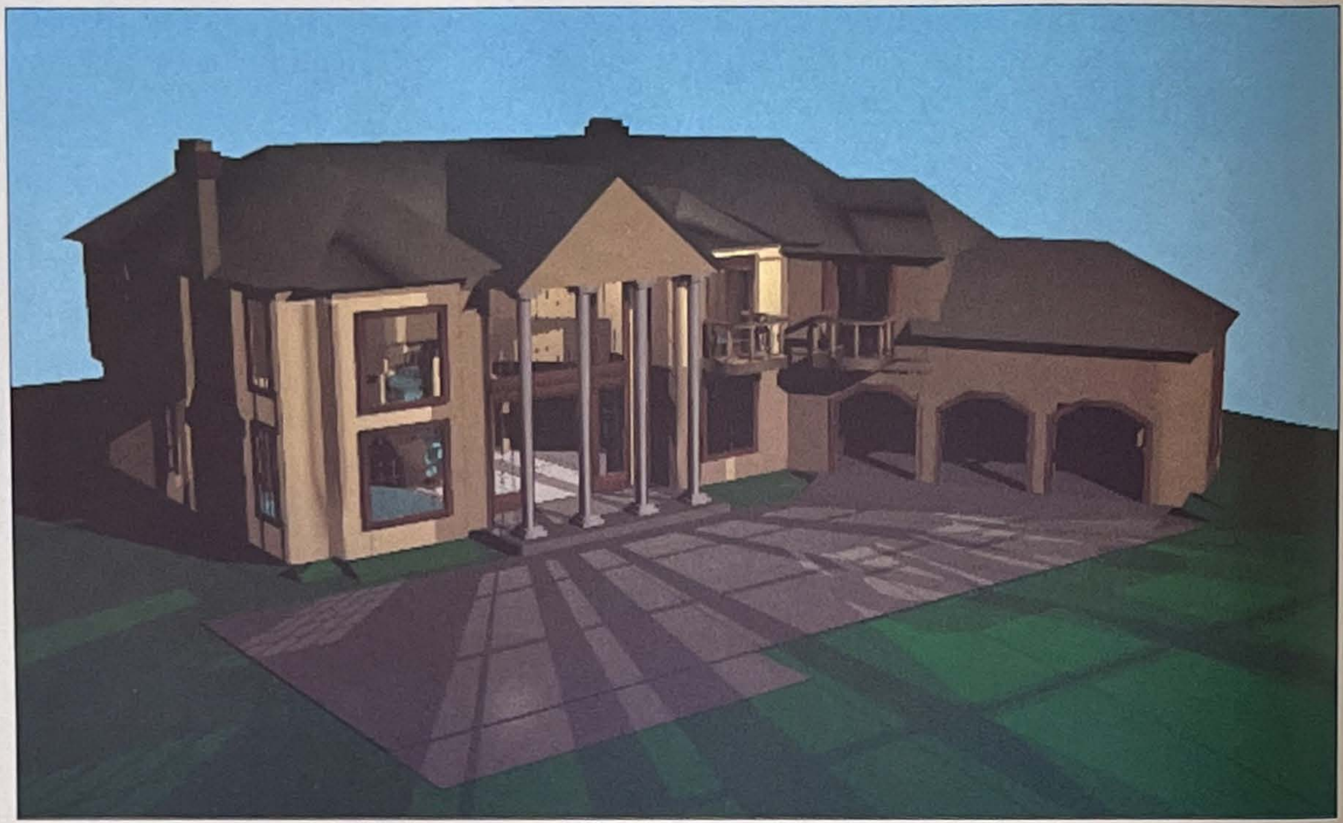
Not quite ready for prime time

Hardware and software developments are beginning to make the Mac a rich environment for video production.



This is a still from a "fly-by" created by Advanced Digital Imaging. The animation, created on the Mac with Visual Information's Dimensions, was transferred to videotape with the use of Truevision's NuVista board. In the animation, the camera circles the house so that the viewer sees it from all sides.

By Steve Rosenthal

The appeal of the moving image is evident everywhere from waiting lines at movie theatres to waiting lists at video stores, and that phenomenon is no less apparent among users of the Macintosh. Because of this attraction (and the attraction many have to experiment on the Mac), some creative people are beginning to incorporate animation in Mac-based video-production projects.

This article discusses primarily the Mac software being used for the phases of the video production process: pre-production, the actual production and post-production.

One of the attractions of the Mac in video production is the multimedia capabilities of the machine.

"We see four application areas: learning, presentation, reference systems, and arts and creativity," said Catherine Nunes, Apple's manager of Business Multimedia Solutions and Applications, under which the video production category falls. In any one of these fields, Nunes said, the result can be a mix of text, sound and graphics, all done with a variety of techniques. The result may be shown on a Mac, broadcast through use of a video board producing NTSC signals, transferred to film or recorded onto a professional videotape format. Either of the two transfers could be broadcast as well.

What's most developed? Slide-show sequencing is fairly well-developed on the Mac, using to a limited degree, the film and video "wipe" technique. In Cricket Presents... from Cricket Software of Malvern, Pa., for instance, which has some sophisticated techniques, Slide A will gradually fade away as Slide B takes its place.

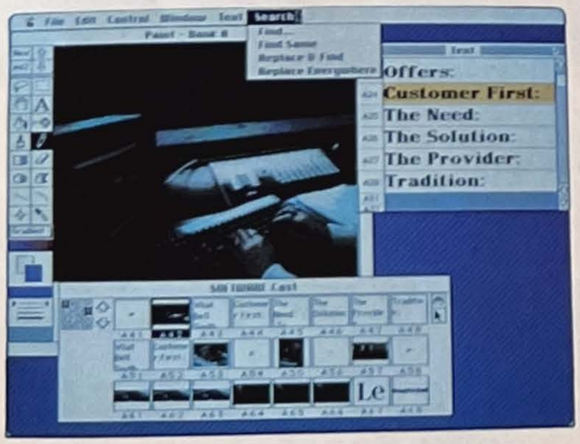
On the other hand, smooth animation on the Mac is currently not at the "Who Framed Roger Rabbit?" level. Just as with the early days of desktop publishing, many experts in video production have said that Mac-based desktop video does not yet produce the same quality as professional video equipment does.

Mac systems can "leave the video with a flat look," said Steve Peterson, a consultant in Aptos, Calif., who has worked as a developer of video systems for the Amiga computer. "People are used to TV with fast cuts and video effects that communicate much more strongly."

Consequently, Mac-based systems are now more often used for production planning and support, for producing in-house videos and animations (see "KNVB's Macs go video" in the accompanying MacWEEK GA Supplement) and, in combination with other kinds of hardware, for edit control.

The Mac advantage. Like desktop publishing systems, alternative Mac-based systems have their advantages compared to the "professional" level. As Marc Canter, president of MacroMind Inc., said about producing animations with his company's VideoWorks series, "Not only is it affordable enough to do in a small business or at home, but it gives you instantaneous feedback." The equivalent access to high-grade equipment is too expensive for most experimentation, and even large corporations that have the equipment in-house must ration the access. "You need time to experiment," said Canter. "It's only when you do it five times that you get it right."

Third-party hardware companies are now delivering some of the sophisticated video boards needed to capture and output the right signals for video-standard moving graphics (see Window On Graphics Boards, MacWEEK, Oct. 11). Some of these boards, like Video Producer from Computer Friends, ColorSpace II from Mass Micro Systems Inc. and the NuVista from Truevision



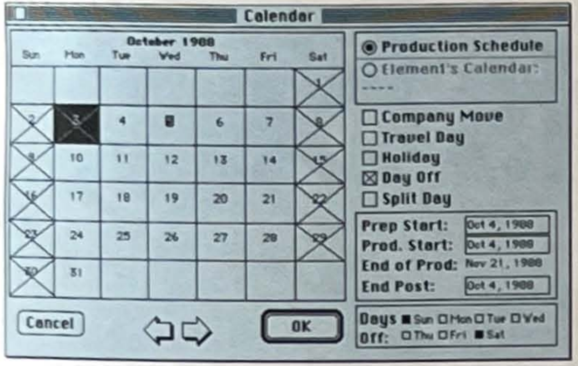
MacroMind brought this frame of video into the software "cast" of its VideoWorks Professional program with a Howtek scanner. After bringing it onto the "stage," titling can be added with the program's word processing features.

This is a still from a "walkthrough" of a kitchen created by Advanced Digital Imaging. This animation will let the architect and prospective owner look at all parts of the kitchen to see if it meets their specifications.

can combine external video with Macintosh images.

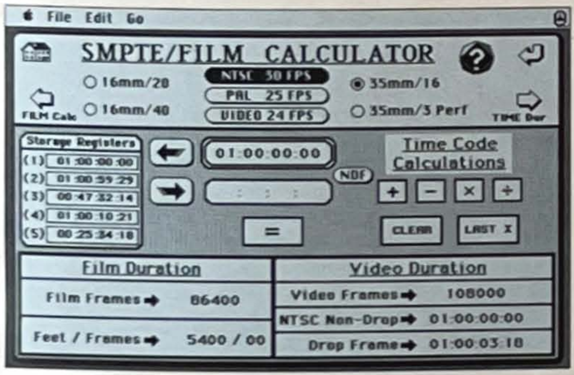
Pre-production. About half the film and video industry is computerized to some degree with personal computers. For instance, a film maker can use a series of products from Screenplay Systems: Movie Magic Budgeting and Scriptor for the screenwriting, which works with Microsoft Word and Movie Magic Scheduling.

Although many production tasks can also be done with business software packages, industrial tapes, feature videos, commercials and feature films all have their own peculiar rules, script formats and budgeting conventions. Chris Huntley, vice president of Screenplay Systems, described his Movie Magic Budgeting product as an "estimating budget program that will handle TV movies and one-hour TV shows — anything you would project as an expense you put into the program."



● Production Schedule
○ Element's Calendar:
☐ Company Move
☐ Travel Day
☐ Holiday
☒ Day Off
☐ Split Day
Prep Start: Oct 4, 1988
Prod. Start: Oct 4, 1988
End of Prod: Nov 21, 1988
End Post: Oct 4, 1988
Days Off: ■ Sun ☐ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ■ Sat

Screenplay Systems' Movie Magic Scheduling has templates for putting together filming schedules, "strips," cast lists and other reports needed for making a movie.



○ 16mm/20
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01:00:00:00
Storage Registers
(1) 01:00:00:00
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(3) 00:47:32:14
(4) 01:00:10:21
(5) 00:25:34:18
Film Duration
Film Frames ➡ 86400
Feet / Frames ➡ 5400 / 00
Video Duration
Video Frames ➡ 108000
NTSC Non-Drop ➡ 01:00:00:00
Drop Frame ➡ 01:00:03:18

EdgeWriter is a film-to-videotape transfer system that now uses the Mac as a controller.

Another product for film and video budgeting, MacToolkit from Max3 Inc., consists of two programs, one for budgeting and one for scheduling programs that can handle most types of productions, excluding commercials. Ben Cahan, MacToolkit's designer, said, "We are releasing a labor guide on disk that will include all the union labor rates, completely accessible from within the program." With this add-on disk, a person knows how much to budget for various union employees and Screen Guild rates.

Jim Lipton, director of technical support for American Intelliware Corp., which makes Storyboarder and Scriptwriter, said that many video productions are done in a format known as "dual-column audio video." That means, he said, that "writers want to start in the right column, the audio column, and write the audio information scene by scene. They want scenes numbered automatically and updated if they insert a scene. Then, after writing down 90 pages, they want to come back in the left column and put video where they want. The audio column should be double spaced, but the video column is single spaced." There are dozens of other formatting rules that normal word processing programs don't include. His choice, of course, is his company's Scriptwriter.

Max3 Inc. offers another choice, a French import package called CineWrite.

Once the script is written, or simultaneous with its writing, a story board is produced (a series of drawings detailing major frames in the film or video). Storyboarder is customized for video and film production. (See "HyperCard for graphic artists" in the accompanying GA Supplement for a discussion of using HyperCard to create story boards.)

Production. Cliff Auchmoody, a chemical engineer turned video producer, with his son Scott, makes video walkthroughs for architects. Auchmoody recommends using simple two-dimensional and 3-D animations. His company, Advanced Digital Imaging, uses Dimensions and Dimensions Animator from Visual Information Inc.

"I take a set of plans and create 3-D images of architect-designed homes," the senior Auchmoody said. "I then convert these to a fly-by or walkthrough so the architect can show it to the client." A fly-by is when the camera circles the house so you see all facets of it. A walkthrough makes it seem like you are walking through a room and getting to look at different parts of it.

For this type of video, Auchmoody said, you normally need three basic tools: modeling, animation and rendering packages. Then, if you don't export the result to videotape, you'll need some kind of presentation system to show the result. The modeling — the construction of the basic objects and shapes that will form the cast and backdrops — can be done with programs like Super 3D from Silicon Beach Software of San Diego and other paint, 3-D, CAD and presentation programs. Auchmoody used the modeling module of Dimensions.

While Auchmoody also used the animation module of Dimensions to animate his architectural drawings, others turn to VideoWorks II, probably the most widely used animation package on the Mac. In this animation step, you orient the size of your objects, synchronize their paths and coordinate the objects to music.

The rendering step — filling in coloring, textures, highlights and shadows on surfaces — comes after the animation step. Visual Information was the first company to offer sophisticated rendering techniques on the Mac similar to those done on higher-end machines. Swivel 3D from Paracomp of San Francisco can now do Mac rendering as well. However, creating a complicated finished image may take from hours to days. Some complex rendering projects therefore, may still best be done on other machines.

The next step Digital Imaging takes is to transfer the computer animation to videotape. For this, the Auchmoodys are using Truevision's NuVista board. Once the animation is on videotape, final editing will take place.

The Auchmoodys are pleased with their Macintosh results. "It takes just weeks instead of months or years" to produce one of their walkthroughs, said Scott Auchmoody.

Post-production. Video-editing control is another area that's beginning to attract Macintosh developers. Traditionally, logging the film sequences shot every day (the dailies), tracking the work prints (the copies where the editing is done), compiling a final edit decision list, or EDL (the sequence of scenes, cuts and effects that will comprise the final master), and creating the final edit were all done by labor-intensive methods and dedicated computer equipment, including those that log the special time codes or edge numbers used in video and film production.

Consultant Peterson maintained that there's a real opening for Mac-based systems. "Professional video systems have very primitive interfaces, with lots of numbers for cut-in and cut-out points. Even the highest-end systems, which cost thousands of dollars, are the same: They're little green screens with a lots of numbers; there's no visual metaphor."

But now there is the Mac. "I got very excited when I first saw the Mac," said Clark Higgins, technical director of EdgeWriter Systems of San Francisco. "The control panel we were working with was very hard to read."

EdgeWriter is a film-to-videotape transfer system that now uses the Mac as a controller. The EdgeWriter hardware, a KEM telecine that runs the film and a video deck, was developed before the Mac. The painstaking logging of all the film data was done elsewhere. Now, with the Microsoft Excel template that Higgins developed, all the film information is logged into the Mac, becoming highly visible, accessible and able to be used in other contexts. Higgins has also developed a HyperCard stack that manipulates the information.

The difficulty with film-to-video transfer is that film runs at 24 frames per second and videotape at 30 fps. To handle this discrepancy, Higgins developed in the EdgeWriter software a SMPTE calculator that can calculate the differences in the frames. "When you see you're a frame short or over," said Higgins, "you know to make adjustments."

With all of these developments, the total power of available Macintosh video products is still far short of what might be available in a well-equipped television studio. But just about everyone involved in the area says the Mac is catching up fast. □

The visual standards

Almost all Mac programs for creating graphic objects and images can save their output in the PICT or PICT2 format created by Apple as the standard graphic-exchange format for Macintosh applications. The PICT formats are based largely on QuickDraw.

TIFF (Tag Image File Format), originally designed as a standard format for files created by scanners, is now an option for most programs that create large bit maps. Many video digitizers offer this as an output choice.

PICS, a standard proposed by MacroMind, specifies a sequence of PICT images. Using a PICS transfer allows an animation program to pick up several sequential or distinct images from a drawing package.

For transferring 3-D objects, MacroMind has proposed another file format called 3DGS. Many of the 3-D modeling programs plan to support this format in future versions.

Once objects are designed and instructions for their motion created, the proposed Renderman format from Pixar of Seattle can be used. Renderman will give directions to the sophisticated Pixar software and hardware that create the actual images; its role is often compared with the way PostScript carries formatting information to a printer.

NTSC (National Television System Committee) is shorthand for the type of video signal used by the broadcast video industry in the United States and Japan. It specifies a timing format based on 30 frames per second, each made of two interspaced fields and about 525 horizontal lines per frame.

RGB (red-green-blue) is not really a standard but a way of saying that the system being discussed sends or receives the picture part of the video signal as three individual color signals rather than as one combined video signal. Many RGB systems also use a different timing format than broadcast video.

SMPTE, The Society of Motion Picture and Television Engineers, is a system designed to give frames in films or videos their own numeric identification, allowing for synchronization to music. — *By Steve Rosenthal*

PRODUCT INFO

Advanced Digital Imaging
Architectural video presentations: **$5,000** and up
22 Rocky Knoll
Irvine, Calif. 92715
(714) 854-3980

American Intelliware Corp.
Scriptwriter: **$495**; Storyboarder: **$495**
P.O. Box 6980
Torrance, Calif. 90504
(213) 533-4040

Computer Friends
TV Producer Professional: **$1,500**;
Color Freeze 24: **$1,999**
14250 N.W. Science Park Drive
Portland, Ore. 97229
(503) 626-2291; (800) 547-3303

EdgeWriter Film/Video Systems
Call for information
30 Berry St.
San Francisco, Calif. 94107
(415) 957-1744

MacroMind Inc.
VideoWorks II: **$295**; VideoWorks Professional: **$695**
1028 W. Wolfram
Chicago, Ill. 60657
(312) 871-6448

Mass Micro Systems Inc.
ColorSpace II: **$1,995**
550 Del Ray Ave.
Sunnyvale, Calif. 94086
(408) 522-7979

Max3 Inc.
CineWrite: **$495**; MacToolkit: **$695**
3021 Airport Ave., Suite No. 112
Santa Monica, Calif. 90405
(213) 398-3771

Screenplay Systems
Movie Magic Budgeting: **$595**; Movie Magic Scheduling: **$595** for budgeting program owners, **$695** for others; Scriptor: **$295**
150 E. Olive Ave., Suite 305
Burbank, Calif. 95102
(818) 843-6557

Truevision
NuVista board: **$4,250** for 2 Mbyte, **$5,995** for 4 Mbyte, plus **$375** RAM surcharge
7351 Shadeland Station
Indiapolis, Ind. 46256
(317) 841-0332; (800) 858-TRUE

Visual Information Inc.
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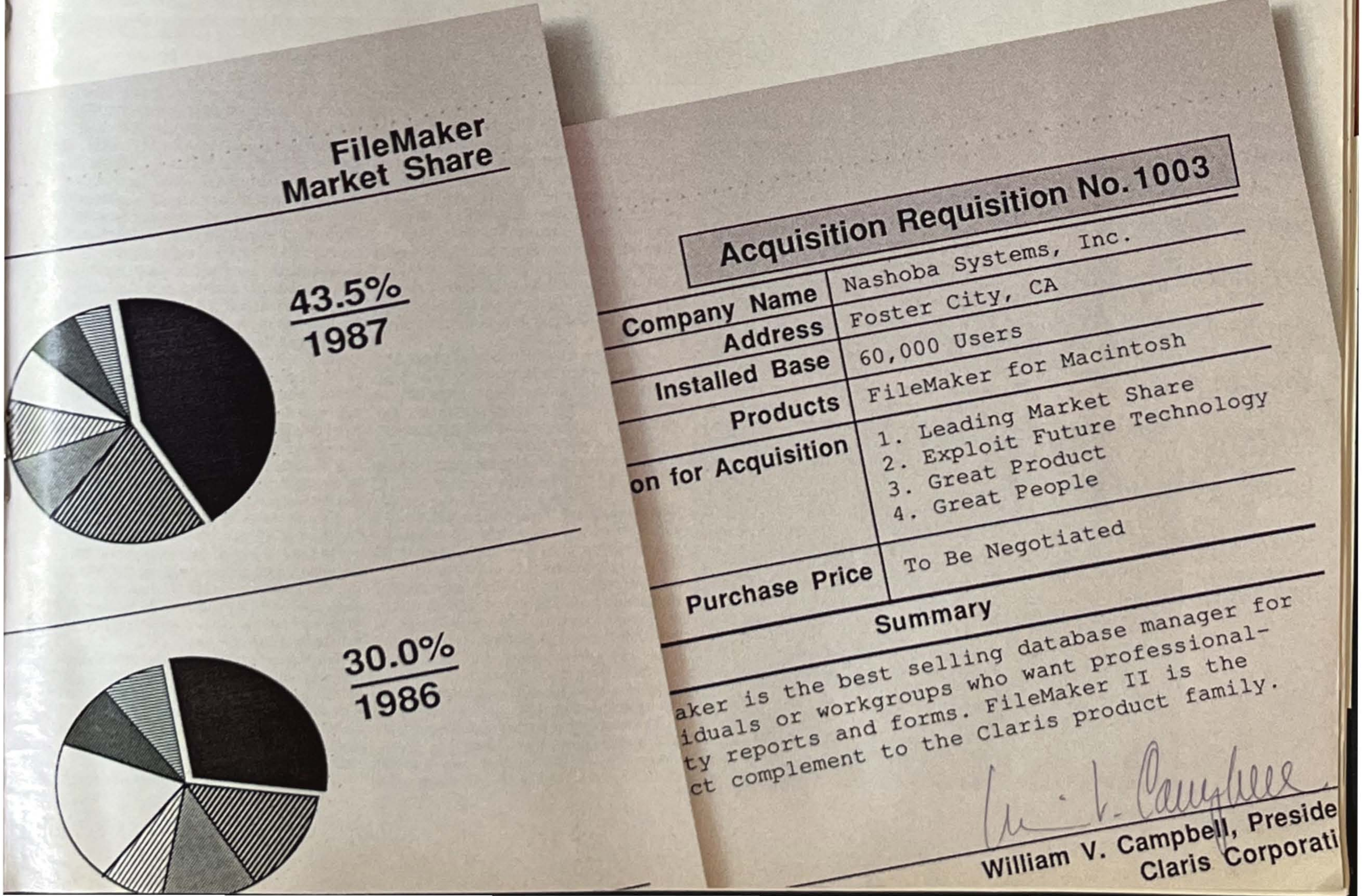

Acquisition Requisition No. 1003

Company Name	Nashoba Systems, Inc.
Address	Foster City, CA
Installed Base	60,000 Users
Products	FileMaker for Macintosh
on for Acquisition	1. Leading Market Share 2. Exploit Future Technology 3. Great Product 4. Great People
Purchase Price	To Be Negotiated

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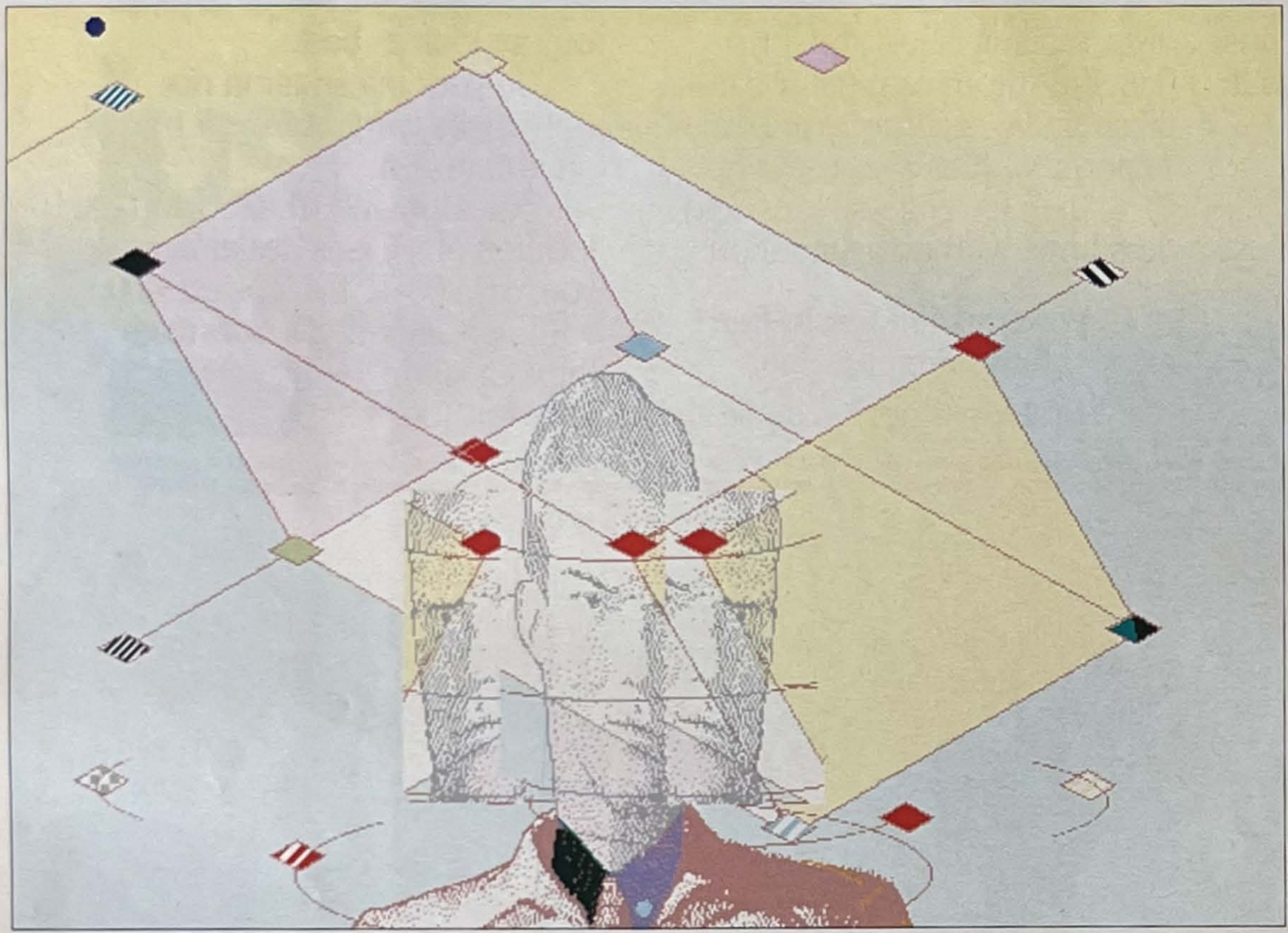
How to get organized — in spite of yourself



JOHN HERSEY

By Lawrence Stevens

Say goodbye to scribbled notes on scraps of paper. You can now organize your business beyond your wildest expectations.

Craig Doxie, reseller area manager of GTE Data Products, is responsible for more than 600 accounts and potential accounts in New York, New Jersey and Pennsylvania. Because he covers such a large area, he doesn't have the luxury of flying out to visit a single client and flying back the next day. Instead, he has to plan his driving route so that he can contact as many clients as possible in both directions. And to really work efficiently, he has to choose a route that allows him to visit the most important clients and potential clients who have the capacity to give his company the most business.

"The way I used to plan trips was to go through stacks of computer printouts, try to pick out the largest clients in the area where I planned to travel, hunt for their map locations and stick pins in them, and then trace a route by drawing a line through as many of the pins as possible," he said. "The process took hours, and more often than not, destroyed the map. A lot of the times I would give up and just 'blitz' a few towns that were near each other, seeing as many people as I could, even if some of them were poor prospects."

Doxie is now, as he puts it, "working smarter," using a program called GeoQuery from Odesta Corp. This is an automated mapping program that can display symbols on a screen of a map to represent locations. In Doxie's case, each symbol represents a client's store or office. He uses different symbols to distinguish the dollar volume of clients and the potential dollar volume of prospects.

Doxie stores all the information he has about clients and prospects in FileMaker II from Claris. When he is about to travel through an area, he exports the information on the clients in that region to GeoQuery. Using ZIP codes, GeoQuery is able to pinpoint the map location of any client. The program can also display symbols at the map locations, for example, of all existing clients with an annual dollar volume of more than $1 million. Then Doxie can have a second symbol displayed on the map locations of prospects with a potential dollar volume of $750,000 to $1 million. Looking at the cluster of pins, he can select the best route for his trip and the best order of visiting clients.

GeoQuery is a type of program that can loosely be grouped under the umbrella term of personal-information software. These are products that help organize your workday whether that means planning business trips, keeping track of appointments and other daily activities, assessing billable time to the right client or tracking sales leads.

Time management. Time-management software is the most common of these personal-organization packages since time is the one commodity shared by all business people. Some of these products basically duplicate an appointment book. The most well-known is the date book stack that comes with HyperCard. Another example is Multi-User Appointment Diary, a desk accessory date book that is packaged with Smart Alarms from Imagine Software, a utility that will signal you when you have an appointment.

The most comprehensive appointment book package is Rendezvous from PMC Telesystems Inc. This has three types of calendars: daily, weekly and annual, into which you enter appointments, reminders, completed activities and events. The program can search your entries to find, for example, how many times you visited a particular customer or when the next sales meeting is scheduled. The program also lets you enter daily alarm notes, which flash across the screen whenever the Mac is powered up, or time alarms, which flash across the screen at the specified time even if you are in another application.

Glen Schiller, director of corporate sales at Byte Computers, a computer retailer in Vancouver, B.C., requires all his salespeople to use Rendezvous. He said that not only does it help the sales force organize their day better, but it eliminates the need to maintain multiple records for the same activity. Before using Rendezvous, the salespeople had to keep their own appointment book, the office staff had to keep a record of where the salespeople were at any time during the day, and the sales manager had to receive and file weekly call reports to see how the salespeople were spending their time. By keeping Rendezvous on a network, the information has to be typed in only once and is available for anyone who needs it.

"In a sales organization, an appointment book can't be a private affair," Schiller said. "Rendezvous lets us use it as a corporate tool. Not only can we keep tabs on our sales force, but we can plan sales meetings at times when we know everyone is free, and we can enter appointments or meetings in a salesperson's book."

While Rendezvous, with its extensive search functions, networking capability and alarms, is the strongest straight date book program, other packages combine time management with other organizational functions. For example, Focal Point from TENpointO, a division of Mediagenic, contains 18 HyperCard stacks related to personal organization, including two calendars, a to-do list, a phone dialer and outgoing and incoming phone log, a deadline sheet, and client and vendor records cards. Focal Point II, due out soon, will include about 50 new and enhanced features. The most important addition is the inclusion of a run-time version of Reports, the company's HyperCard report-generation facility. It will also include work group communications and task- and project-management features.

Rick Lucas, a commercial photographer in Denver, was the type of person who kept notes and reminders on slips of paper that he scattered through his pockets and desk. He said that Focal Point helped him get organized not only by replacing his scraps of paper but also by forcing him to think about how to better run his business.

"In order to set up the stacks," he said, "you have to sit down and decide which ones you're going to use and how you're going to use them. I found myself keeping records in a way that I probably could have done with a paper book, but I never did. It's a good feeling to have everything in one place so I don't have to hunt for things anymore."

Lucas uses Focal Point's incoming and outgoing phone log so that he follows up on telephone requests or proposals. He dials all his calls with the program's phone dialer, which creates a record of the call and logs in all the calls he receives, so he can't forget to act on them.

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Getting paid for your time. Timeslips III from North Edge Software Corp. is a time-management program primarily for those who bill by time, such as attorneys, consultants or construction workers. The program keeps track of time spent on projects using a stopwatch-type desk accessory, and it monitors elapsed time even when the Mac is shut off. If work is done while away from the Mac, you can enter the time when you get back. Timeslips III's setup involves inputting information about each job, including the name and address of the person or organization to bill, the hourly rate and whether the client is billed by the hour or on a flat rate. The program then keeps a running total of the billable amount each client owes and will print out invoices or reports when required.

Tracking client and prospect activity. CLIENT/Mac from Software Complement, C.A.T. from Chang Labs and Client from Softworks Inc. help representatives and service professionals keep on top of client activities by tracking sales calls, letter-writing campaigns, and product or service inquiries.

Bill Schjelderup, president of COMPanion Consulting Corp., a software consulting company based in Cupertino, Calif., uses CLIENT/Mac to manage COMPanion's sales effort. He said that although his company was able to keep track of its sales activities before it got CLIENT/Mac, the software eliminates the need for a lot of paper shuffling. "Once you input client data into Omnis 3 [the database from Blyth Software with which CLIENT/Mac works], it is input for good," he said. "You can use it to send letters, track telephone calls and create reports. We don't have to worry about moving data from one form to another."

To use CLIENT/Mac, Schjelderup inputs the client list into Omnis 3. Each client can be labeled with keywords to identify them. The program can then be used to print form letters to, for example, all clients who inquired about software services within the past three months. It also lets you tie client activities to future dates by specifying a time for a follow-up visit. Each day, the program can generate a list of the activities specified to that day. The time function lets you keep track of time spent on each project. The time is broken down into billable and non-billable, so you can determine the actual billing rate per hour.

C.A.T. also tracks business contacts. It stores four kinds of records: account, contact, event and activity. All the records are hot-linked, so changing an address in one kind of record changes it in every other record. The program can track small activities such as a visit to a client or a long-term project like opening a branch office. When dates are specified, the program can provide a list of activities due on any given day.

You can set up 12 categories for sorting such items as customer name, product preference or ZIP code. You can also get reports by any of those categories. C.A.T. will also provide form letters or mailing labels.

Client is a HyperCard stack that contains client information, including name, address, product or service interest, contact history and sales history. You can use it to match client-interest cards with new products or services and then print labels to place on new product announcements. Or you can export the data to a word processor for mail merge.

Project management. One aspect of organizing a business is the organization of individual projects. In some cases, those tasks can be monitored using general date-book programs, and in other cases, the project is so vast it requires the use of a full-fledged project man-

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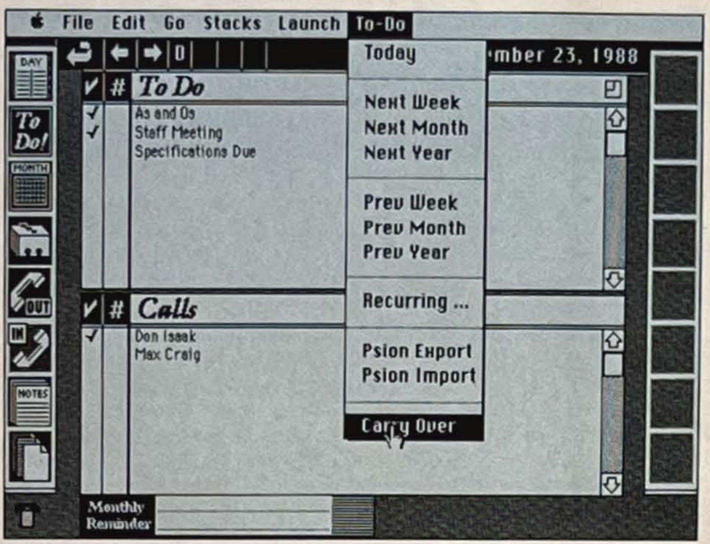
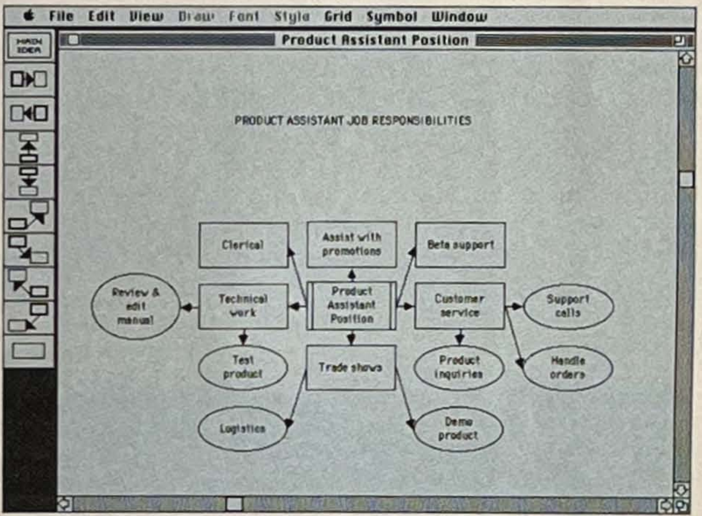
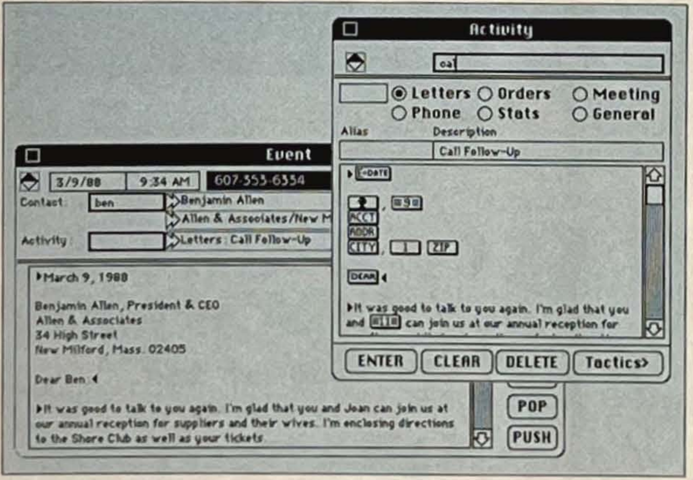


Focal Point II from TENpointO is billed as a complete "personal information manager." In addition to the To-Do List function shown here, it includes project management, work group communications and calendar functions.



For visual thinkers, Inspiration from Ceres Software offers building blocks for creating easy cut-and-paste diagrams and outlines.



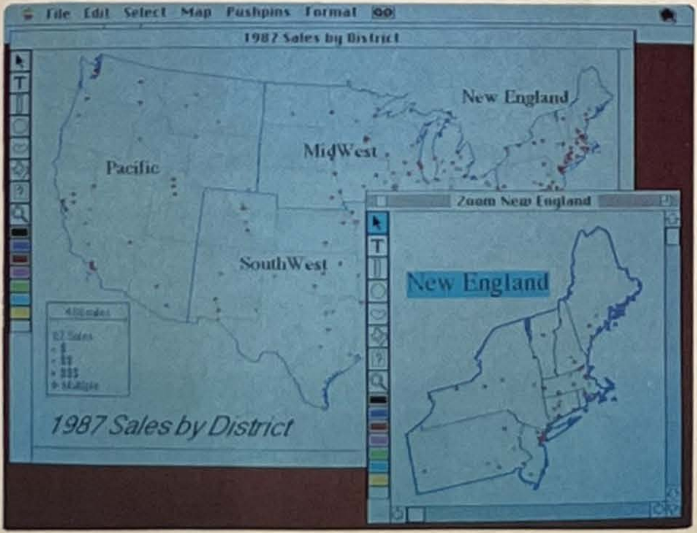
March 9, 1988

Benjamin Allen, President & CEO
Allen & Associates
34 High Street
New Milford, Mass. 02405

Dear Ben:

It was good to talk to you again. I'm glad that you and Joan can join us at our annual reception for suppliers and their wives. I'm enclosing directions to the Shore Club as well as your tickets.

C.A.T. customizes mass mailings as easily as it does a single letter. It can store thousands of separate forms or form letters.



GeoQuery from Odesta might be used to map corporate locations or to make a geographic representation of a sales campaign.

PRODUCT INFO

Blyth Software
Omnis 3.25: $249; Omnis 3.3 (developer package): $795
2929 Campus Drive, Suite 425
San Mateo, Calif. 94403
(415) 571-0222

Ceres Software Inc.
Inspiration 1.0: $149
9498 S.W. Barbur Blvd., Suite 103
Portland, Ore. 97219
(503) 245-9011

Chang Labs
C.A.T. 2.0: $399.95
5300 Stevens Creek Blvd.
San Jose, Calif. 95129
(408) 246-8020; (800) 831-8080 (in California only); (800) 972-8800

Claris Corp.
MacProject II: $495, FileMaker II: $299
440 Clyde Ave.
Mountain View, Calif. 94943
(415) 960-1500

Imagine Software
Multi-User Appointment Diary 1.0 (bundled with Smart Alarms 2.9): $149.95
19 Bolinas Road
Fairfax, Calif. 94930
(415) 453-3944

Mainstay
MacSchedule 1.0: $195;
Think 'n Time 1.1: $99.95
5311B Derry Ave.
Agoura Hills, Calif. 91301
(818) 991-6540

Micro Planning International
MICRO PLANNER 6.1A: $595
235 Montgomery St., Suite 840
San Francisco, Calif. 94104
(415) 788-3324

North Edge Software Corp.
Timeslips III 1.06: $199.95
239 Western Ave.
Essex, Mass. 01929
(617) 468-5314; (800) 338-5314

Odesta Corp.
GeoQuery 1.0: $349
4084 Commercial Ave.
Northbrook, Ill. 60062
(312) 498-5615; (800) 323-5423

PMC Telesystems Inc.
Rendezvous 2.0: $200
P.O. Box 5127
Vancouver, B.C. V6B4A9
(604) 255-9949

Software Complement
CLIENT/Mac 1.106: $125;
run-time version of Omnis 3+: $100
8 Pennsylvania Ave.
Matamoris, Pa. 18336
(717) 491-2492

Softworks Inc.
Client 1.01: $195
P.O. Box 2285
Huntington, Conn. 06484
(203) 926-1116

TENpointO, a division of Mediagenic
Focal Point with Business Class: $79.95;
Focal Point II: $199.95, $39.95 for upgrade until Jan. 31, 1989, $89 thereafter
3885 Bohannon Drive
Menlo Park, Calif. 94020
(415) 329-0500

Continued from previous page

ager like MacProject II from Claris Corp. or MICRO PLANNER 6.1A from Micro Planning International. But the majority of business people find that a smaller program can usually get them through occasional projects such as planning a brochure or a business meeting.

MacSchedule from Mainstay is one of the smallest and simplest of these programs. Its display is a calendar with dates strung horizontally along the top of the screen. Activities are listed on the left side of the screen. You then draw a double line starting at the date the task can begin and ending at the date by which the task must be finished. As the project progresses, you can fill in the double line to represent the percent of the task that is completed. If a task is behind schedule, you use the Banana tool (to indicate you've slipped) to create a dotted line to the new completion date. If a task has to be rescheduled, the Watch tool draws a dotted symbol at the rescheduled date.

Inspiration from Ceres Software represents ideas or tasks by containing them within shapes such as a rectangle, circle, oval, rubber stamp or light bulb instead of listing them in columns as an outliner or date book. The purpose of this is to allow you to plan a project without having to discipline yourself into thinking consecutively. You just type into a central rectangle all the tasks that will have to be accomplished, hitting return after each. Whenever you stop for about 10 seconds, the program spreads those tasks around the central rectangle. You then relate the tasks to each other with arrows so that at the end you have multiple levels of tasks and the order in which they should be accomplished. The program can then translate the diagram into outline form.

Will Newman, one of the owners of Desktop Solutions, a Tigard, Ore., small-business consulting company, prefers not to plan projects consecutively. "When we're planing a brochure, my partner and I sit around and throw out ideas about the things that have to be done," he explained. "Lay it out, get price quotes from the printer, hire an artist. We don't try to list them in order. I just type into Inspiration whatever each of us says. Later we work out the order. It's a much more creative way of thinking and planning."

Think 'n Time from Mainstay ties together idea generation and time references. Using this, you can create general topics, such as break ground, build masonry forms and pour concrete, represented in a tree structure. Up to 20 pages of text, containing such information as who is responsible for the task, how much it will cost and who should be billed for it, can be attached to each topic. Like Inspiration, you can relocate the branches and create different hosts and dependencies, and you can collapse and enlarge topics to any level. But Think 'n Time is unique in that each item can have two "tags." One tag is a date and time tag that can contain the beginning date of each project. You can then have the program generate a calendar that shows all the tasks in date order for a given period grouped by month or week. The second tag is a numeric tag that keeps a running total of figures in the text sheets. If you want to keep track of hours worked on a project, then each day you type into the text section the number of minutes you worked on the job. In the scale box, you can specify 60 and in the units box you specify hour. So if you work 47 minutes, the program will divide that by 60 and display 0.78 hours.

In spite of yourself, these products can allow you to become organized and caught up on those details that plague us all. □

Lawrence Stevens writes frequently for MacWEEK.

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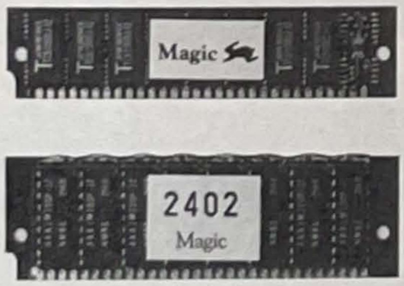

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Solutions/The Organizational Mac

A consultant's guide to finding a consultant

DON CRABB

"Are you kidding, Don? The Mac is the easiest computer in the world to use. Why would I need a consultant?" Or so I was told by a client, whom I'll call Frank, as we recently argued about his Mac networking needs over lunch.

I hear that kind of comment about as often as this one, from another client, whom I'll call Steve: "I don't know where to start, I'm so confused by the Mac, by this AppleTalk stuff, by this hard disk gizmo. I'm lost."

Fifty bucks says that all you armchair analysts just assumed that I ended up consulting for Steve, after being treated to lunch by Frank. But you'd be wrong, because you've missed the fundamental point of computer consulting: You can't consult if your clients don't know what they want. You have to encourage your clients to take the time and effort before your first meeting to formalize their needs.

In this case, Frank needed my help because he had taken the time to really think about the results, to think about what he expected from his Mac network. But he made the classic mistake of thinking that reading a few articles on the Mac made him an expert. The Mac encourages that kind of belief because it is a machine that is so fundamentally satisfying to use.

Steve, on the other hand, had bought a number of Macs for his office without first determining how to use them. All he knew was that the Mac was the hot computer and that his business needed them to stay even with the competition.

Initially, I didn't do any formal consulting for Steve. Instead, I recommended that he put his Macs aside for a while and really familiarize himself with his office's daily operations.

After a couple of weeks, Steve made the breakthrough. He began asking how he could do something using the Mac that had been done by hand. Slowly, he started analyzing how his company worked, how his staff did their jobs and what tools they needed for the work. By the end of the month Steve was reading MacWEEK too, and becoming more articulate about how he needed to use Macs. He was ready for expert consulting help.

Picking a consultant involves a sincere and non-trivial effort on your part. Unless you have made a systematic effort to evaluate all the obvious points about your problem, you won't have thought about the important but not-so-obvious ones.

When the process is all over, you'll find that you've spent just as much time as the consultant considering your computing needs and problems. And that fact surprises just about every client I've ever helped. They just assume that Don Crabb, *the expert*, will somehow magically divine their needs, problems, desires and quirks, and roll them into a *solution*.

I can't emphasize this too much: If you don't make the effort to investigate your problem thoroughly before consulting the experts, the advice you get will be shallow and incomplete, no matter how good the consultant.

Consultants work with what you give them. They put together plans, recommendations, budgets, training schedules, software purchases and hardware installations based on the specifications they get from interviewing you. If you haven't gone through the planning, reflection and refinement cycle before those interviews, you'll likely waste your time and money.

Break down your computing problem into its component parts. Divide and conquer. Don't try to tackle ideas that have too many branches. Keep each of your thoughts as basic as possible.

Let's look at a specific example. Suppose you already have Macs hooked together over LocalTalk so they share a LaserWriter. You're now at the point where you'd like your Macs to share information and maybe applications, in addition to hardware resources.

With that in mind, list all the specific information you want to share and the associated applications. Then prioritize the list based on criteria important to your business: How often the information is used, how often it's changed and how it must be reported.

In other words, you conquer the problem by dividing it up into smaller, more understandable parts. Now you're ready to search for a consultant because you can look for someone with precise experience dealing with the items on your list. If your list consists mostly of spreadsheet files, for example, you can concentrate on finding a consultant who is a wizard at networked spreadsheets.

Not only will the consultant you hire be better suited to solve your problems, that consultant will already have a good preliminary idea of what you need. In the long run, that saves consulting time, your time and money. It also helps ensure computing solutions that meet computing problems. After all, that's supposed to be the whole point of hiring a consultant, isn't it? □

Don Crabb is the director of laboratories and a senior lecturer for the department of computer science at the University of Chicago.

POINTS TO CONSIDER BEFORE HIRING A CONSULTANT

1. Why does your staff currently use Macs?
    - Statistics
    - Accounting
    - Lab use
    - Spreadsheets
    - Database
    - Custom applications
2. What is your current capital budget for computing? What will it be next year, and the year after?
3. What is your maintenance budget this year? Is it expected to remain steady?
4. What is your training budget this year?
5. What function on the Mac is the weakest within your organization?
6. What single function do you need but can't do on your Macs?
7. Are you satisfied with your current Mac hardware? Are there any reliability problems or functional weaknesses?
8. Why do you think you need a consultant?
9. What do you expect from a consultant?
10. How long can you wait before implementing changes recommended by your consultant?

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The Infinity 40 Turbo drive is another high-reliability product from PLI, one of the leading and oldest manufacturers of hard-disk drives for the Macintosh. PLI drives offer a level of reliability that is second to none in the industry. And if you do need it, you also get a one-year limited warranty and level of technical support and service that is the envy of the industry. Just ask any current PLI drive user.

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PLI

IINTX blows ’em out of the water

But GCC’s BLP gives NT a run for its money

BY RICK LePAGE

With the laser printer market booming, it is often easy to forget that Apple was the first vendor to ship a printer based upon Adobe Systems Inc.’s PostScript page-description language. But Apple was content to rest upon its laurels, which allowed a number of companies like QMS Inc., Qume Corp., Texas Instruments and others to charge past Apple with printers that offered newer printer engines, later versions of PostScript and other features that often had a better price/performance ratio than Apple’s LaserWriter and LaserWriter Plus printers.

Apple altered this scenario last January with the unveiling of the LaserWriter II line, which brought the company’s printer offerings more in line with those available from other vendors. The LaserWriter II series includes three printers of varied capabilities and prices: the LaserWriter IISC; a QuickDraw-based printer priced at $2,799; the LaserWriter IINT, a $4,999 PostScript printer that replaced the LaserWriter Plus; and the LaserWriter IINTX, a $6,999 powerhouse that utilizes the Motorola Inc. 68020 microprocessor to provide quicker output and better expansion capabilities. The LaserWriter II line is also notable for its ability to be upgraded. You can purchase the low-end LaserWriter IISC and easily move up to the LaserWriter IINT or LaserWriter IINTX merely by purchasing a new controller card and swapping the old card out of the printer’s base unit.

While Apple has jumped anew into the PostScript market, a longtime Mac peripherals company, GCC Technologies, has also entered the PostScript market with the Business LaserPrinter (BLP), a $4,199 model that is based mechanically on the company’s Personal LaserPrinter (PLP), a QuickDraw-based printer. The BLP is targeted against the LaserWriter IINT and has a number of features that make it very attractive when compared with the Apple model.

LaserWriter II and BLP hardware. The LaserWriter II is based upon the Canon LBP-SX engine, which has become the standard used by most PostScript printer manufacturers. The SX engine is slimmer than the LBP-CX engine used in the original LaserWriter series and prints much better blacks than the earlier models. The LaserWriter II’s 30-pound weight reduction from its predecessor can also be attributed to the use of the SX engine.

The BLP, on the other hand, uses the same Ricoh 1060 laser engine used in the PLP, which allows the company to keep manufacturing costs low by using the same box as the PLP. Another advantage for GCC is that users of the PLP can upgrade easily to the BLP.

The Ricoh engine’s maximum output is six pages per minute, less than the Canon’s eight page-per-minute rate, but this is not an issue for most typical Mac users. Printer-engine speed makes a difference when it is used in a manner similar to a copier, outputting the same page a number of times. In those cases, the BLP will be slower than any printer that uses the Canon engine.

In addition to throughput, other differences between the LaserWriter II and the BLP can be attributed to the Canon and Ricoh engines. The LaserWriter II line has an estimated life cycle of 300,000 pages, 200,000 more than the old LaserWriters and more than the BLP’s estimated 180,000-page life cycle. In addition, the BLP’s internal hardware requires more servicing by the user than the LaserWriter II. When setting up the BLP, not only will you have to install the toner cartridge, but also the organic photo conductor (OPC) magazine, a unit that contains the print drum that places the toner onto the page. This process is fairly simple, but it might be an issue for some users. Another consideration is that the OPC unit must be replaced every 20,000 copies. (One of the BLP’s status indicators lights when this service needs to be performed.)

Another difference between the two printers is in the toner cartridges and the way they are installed. The LaserWriter II uses a self-contained toner cartridge unit that slips in and out of the printer easily. Users will not come into contact with large portions of toner without a major attempt to do so.

In contrast, the BLP uses a smaller, tray-like mechanism for the toner that is simple to use but also has the potential for creating a big mess. When removing an old cartridge, a sneeze or slight gust of air could result in toner all over the inside of the printer. Every time we changed the toner cartridge, we got a little bit of toner inside the printer. Using the supplied cleaning tool and printing 30 pages or so removed the toner smudges that resulted.

Another hardware difference between the LaserWriter II and the BLP is in the paper tray. The LaserWriter II comes with a single letter-size paper tray that holds 200 sheets of paper. If you want to use other paper sizes, such as legal-size or the European A4 or B5 paper sizes, you will have to purchase additional trays at about $90 each. The BLP has the advantage of using one paper tray and a rotary switch on the front panel of the printer that is used to set the paper size. The BLP’s paper-feed method even allows automatically fed envelopes. A separate paper cassette must be purchased for envelopes with the LaserWriter II.

One other item missing from the BLP but provided on the LaserWriter II printer is an Apple Desktop Bus (ADB) port. The ADB

See LASER PRINTERS, Page 35

COURTESY APPLE

Business LaserPrinter

GCC Technologies
580 Winter St.
Waltham, Mass. 02154
(617) 890-0880

List Prices: Business LaserPrinter: **$4,199**; upgrade from GCC’s Personal LaserPrinter: **$2,299**

+ Memory expandable to 4 Mbytes; SCSI port allows downloadable fonts to be stored on hard disk for quicker access; additional font (Helvetica Compressed) in printer ROM; paper-feed mechanism can handle different paper sizes.

− Toner cartridge has potential to cause spill inside printer; 90-day warranty.

LaserWriter IINT and IINTX

Apple
50525 Mariani Ave.
Cupertino, Calif. 95014
(408) 996-1010

List Prices: LaserWriter IINT: **$4,999**; LaserWriter IINTX: **$6,999**; LaserWriter IINT upgrade from LaserWriter IISC: **$2,699**; LaserWriter IINTX upgrade from LaserWriter IISC: **$4,699**; LaserWriter IINTX upgrade from LaserWriter IINT: **$2,899**

LaserWriter IINT:

+ Easily upgraded; ADB port allows peripheral devices to be attached.

− RAM is fixed at 2 Mbytes; 90-day warranty.

LaserWriter IINTX:

+ Extremely fast; memory expandable to 12 Mbytes; SCSI port allows downloadable fonts to be stored on hard disk for quicker access; ADB port allows peripheral devices to be attached.

− Can only use certain hard disks, which must be dedicated; 90-day warranty.

TIME TESTS FOR BUSINESS LASERPRINTER, LASERWRITER IINT AND NTX

Task (times in minutes:seconds)	BLP	BLP with hard disk	NT	NTX	NTX with hard disk
Initialize	0:55	0:55	0:49	0:42	0:45
Print 10 pages using 5 ROM fonts	2:47	2:33	3:10	2:05	1:57
Print 10 pages using 5 downloaded fonts	3:41	2:59	3:27	2:34	2:06
Print 1 page using 12 ROM fonts	2:18	1:12	2:42	1:24	0:48
Print 1 page using 12 downloaded fonts	3:56	2:05	4:03	2:42	1:18
Print scanned TIFF file	1:18	1:23	1:10	1:10	1:15
Print PICT2 file from	1:45	1:57	1:52	1:03	1:07
Print EPSF file from	2:30	2:36	3:27	1:43	1:49
Print 30-page complex PageMaker file	9:11	7:50	9:54	5:53	5:12

All of the tests were run on a Mac SE with 2.5 Mbytes of memory, running System 6.0 and Laser Prep 5.2 with no INITs. All fonts were loaded into the System file. The hard disk used was a GCC Technologies FX/20; Apple’s LaserWriter Font Utility was used to download fonts to the hard disk.

THE WEEK IN REVIEWS

SuperMac gets spool-hardy

BY DENNIS KLATZKIN

When we reviewed Version 1.1 of SuperMac’s SuperLaserSpool (see MacWEEK, June 29, 1987), we gave it high marks in general. But we did point out that operations tended to slow down while SuperLaserSpool was sending files to the printer. We also noticed that it didn’t offer any speed benefits when spooling PageMaker documents.

SuperLaserSpool 2.0, the latest revision, resolves these limitations and a few others as well. It operates more seamlessly, can handle a larger number of pages and spools PageMaker files using that program’s own Aldus Prep printer driver. (PageMaker 3.01 is recommended.)

SLS is fully compatible with the Mac II, LaserWriter II (SC, NT and NTX) and the latest system software, including MultiFinder. And it’s now an auto-running Startup document (INIT), so you don’t have to set it as the Startup application. Version 2.0 fixes some snags with Microsoft Word, too.

SuperSpool 5.0, the latest version of SuperMac’s ImageWriter spooler, is also a Startup document and is compatible with the latest everything (except LaserWriters, of course). You can now preview pages that are in the print queue and de-install the spooler, as you can in SLS. The all-new manuals for both products are excellent.

SuperLaserSpool 2.0 is $149.95 and SuperSpool 5.0 is $99.95. Users who bought previous versions after Jan. 14 are entitled to a free upgrade (other registered users must pay $20). SuperMac Software is at 295 N. Bernardo Ave., Mountain View, Calif. 94043; (415) 964-9694.

Finder of lost files: In our reviews we sometimes mention freeware and shareware programs, and we try to tell you where to find them on at least one of the big on-line information services. But that’s not always possible, so sometimes you’ll have to do the searching yourself. There are many sources of these programs: the on-line networks, users groups and local bulletin board systems. If you use CompuServe, here’s a handy tip.

CompuServe is a vast department store of shareware and freeware files. But just knowing what you’re shopping for isn’t quite enough. You have to know where to look. CompuServe hosts more than a dozen forums, or special interest groups and vendor-sponsored areas, for the Mac alone. Within each forum are a dozen or more topical Data Libraries that offer downloadable files. Although there are abundant redundancies, there’s no cross-referencing among the compartments of this informational maze.

But CompuServe offers a little-known utility, a master card catalog of sorts. It’s a database of all the files in Mac-related libraries called File Finder MAC (just type “GO MACFF”). The on-line instructions are quick and easy.

For example, a test search using the keyword “ResEdit” yielded a hefty 76 matches in all the libraries of CompuServe’s known world. You can look at a description of any flagged file, but you’ll have to travel to its Data Library to actually download it.

You can reach CompuServe’s voice information lines in Columbus, Ohio, at (800) 848-8199 or (614) 457-0802. ☐

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Taking the grind out of bibliographies

Specialized databases help researchers

BY GERRY LUKOS

Anyone who has ever done research for an academic report, an article submission or background to a business plan has faced the idiosyncrasies of bibliographic citations. There are many types of references, each with different categories of data and required formats. Book citations differ from magazine or journal references; conference proceedings, maps and audio-visual materials each add their own wrinkles.

Moreover, different bibliographic styles have specific requirements for punctuation, spacing, format and order. In a finished bibliography, these different reference types and styles have to be accommodated in a single sorted list, a capability most general-purpose database applications lack.

Two programs, Pro-Cite from Personal Bibliographic Software Inc. and EndNote from Niles & Associates, address the special problems of bibliographic databases for the full-time reference librarian or the occasional researcher.

Pro-Cite. Personal Bibliographic Software's Pro-Cite replaces an earlier product, Professional Bibliographic System. The new program shares the name of its IBM PC counterpart and can also share files, but, nevertheless, it has a real, if cluttered, Macintosh interface.

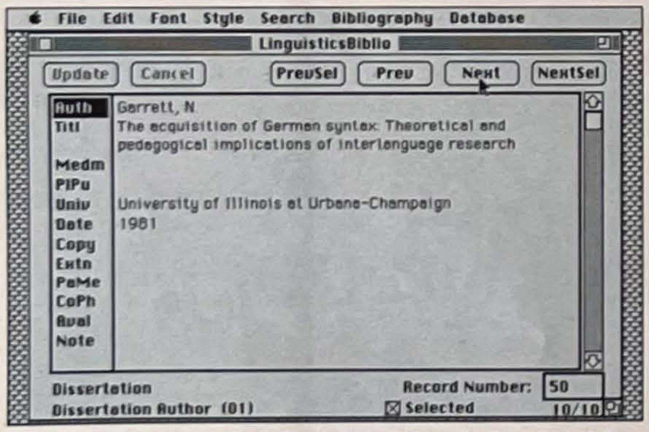
With more than 60 menu options, numerous complex dialog boxes and 600 pages of documentation, Pro-Cite is a very sophisticated bibliography manager. The program can accommodate 32,000 separate references. It sports 26 reference formats, 20 of which come predefined, and it provides the file-management tools and complex search capabilities needed for large-scale databases.

A single record type can have as many as 45 fields — although none does — making it possible to accommodate special documentation requirements. In addition to books, journals and conference proceedings, data entry forms are included for maps, computer programs, sound and video recordings, artwork and more. Each reference type displays only fields appropriate to a particular category. A single reference can contain up to 32 Kbytes, which means that large abstracts or even full articles can be stored.

Pro-Cite's search capabilities are as sophisticated as you would expect for such a heavy-duty database. You can perform complex Boolean searches on the entire database or on subsets defined in previous searches, in specific fields or all fields, and in specific record types. Searches and search-result sets can be saved and used to make printed bibliographies.

The program uses what it calls Punctuation Files to define specific bibliographic styles. Because Pro-Cite was written mainly for the scientific and medical communities, some of the punctuation files are designed for specific organizations like the American Medical Association and the American Institute of Physics. Non-scientific styles like Chicago and Turabian are also included, and you can create your own.

Formatting a bibliography is surprisingly slow because Pro-Cite previews the results on screen as it sends the file to disk or printer. In our tests, a 28-citation bibliography took about 2.5 minutes to format. Under MultiFinder, the operation runs in the background, but your database will be tied up for the duration.



Auth Garrett, N.
Titl The acquisition of German syntax: Theoretical and pedagogical implications of interlanguage research
Medm
PlPu
Univ University of Illinois at Urbana-Champaign
Date 1981
Copy
Extn
PaMe
CoPh
Aval
Note

Dissertation
Dissertation Author (01)
Record Number: 50
☒ Selected
10/10

A Pro-Cite data-entry screen. The reference type is displayed at the bottom, above the name of the selected field.

It is important to standardize the terminology you use in any large database because if a name or any other search term is entered inconsistently, those records are as good as lost. Pro-Cite lets you compile Authority Lists for author names, journal titles, indexing terms and other items. Selecting items from these lists and pasting them into the appropriate fields helps ensure accurate input.

In the past decade, researchers and librarians have come to rely on large collections of information available through various on-line services. Personal Bibliographic Software's companion software, Biblio-Links, automatically transfers downloaded references into the appropriate Pro-Cite work forms and thus eliminates the need for manual entry. Biblio-Links is available for the BRS on-line service, and others will soon be available for Dialog and Medlars.

Although Pro-Cite has a feature that allows you to match in-text citations in a text file with records in the database, the program's chief utility is as a bibliography manager. If you are primarily interested in using a bibliographic database interactively with a word processor, you may want to take a look at EndNote from Niles & Associates.

EndNote. Like Pro-Cite, EndNote can store more than 32,000 records in a database. It also offers 15 reference types with 27 possible fields in each and flexible formatting capabilities. Instead of high-powered file-management tools, however, it has a special talent for integrating bibliographic records into word processing documents.

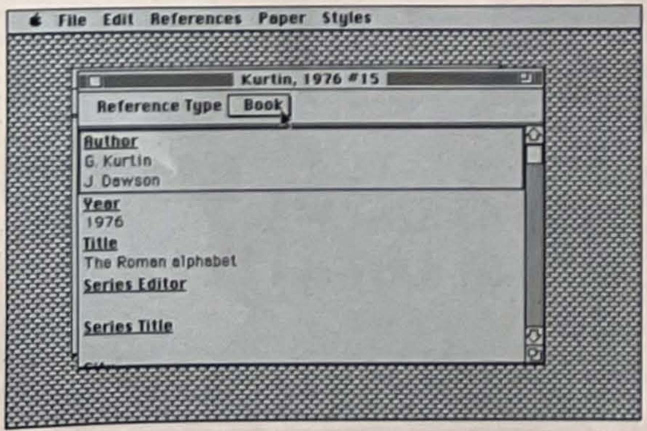
EndNote comes with a convenient desk accessory that lets you open your reference "library" and display your references in author/date/partial-title format. You can click on an entry to examine the complete record, and you can add new records or modify existing ones. If your database is too large to scroll through, you can perform relatively complex searches using EndNote's Find function.

By simply using copy and paste, you mark your document with references from your database. The markers are not in any bibliographic style but are used by the EndNote application during a subsequent formatting operation. When all references are marked in the text, you run the application, choose from among the predefined bibliographic styles (or create your own) and choose your document, and the program creates a copy of the document with the citations properly formatted and a list of references tacked on to the end. With little effort you can produce multiple copies of the same paper formatted in a variety of bibliographic styles. Creating a formatted version of a document containing 28 in-text citations took only 15 seconds with EndNote.

Using Microsoft Word's automatic footnote feature, you can paste citations directly into footnotes. Using EndNote with Word, however, presents some problems because Word removes all formatting from the pasted citations. When the EndNote desk accessory is used in MacWrite or WriteNow, any database text in 12-point Geneva Plain takes on the characteristics of the text next to which it is pasted. All other text retains its formatting, making it possible to include non-standard characters like Greek letters or symbols in citations.

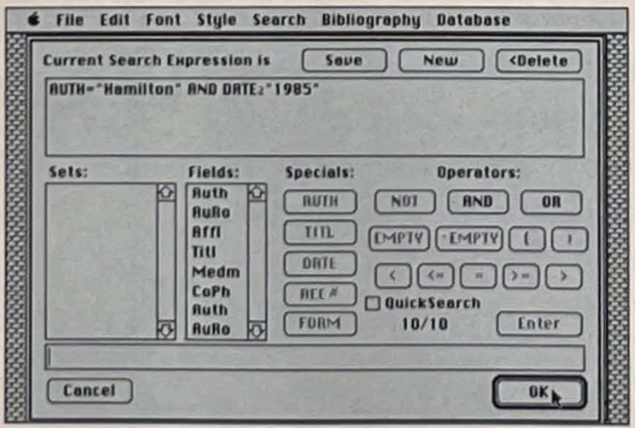
EndNote's clearly written documentation does a nice job of explaining how the program operates. It does not, however, serve well as a quick reference because it lacks a section describing all of the menu options. Moreover, the index looks like an afterthought, and pagination in the table of contents is off. Nevertheless, this is such a well-thought-out program

See BIBLIOGRAPHY, next page



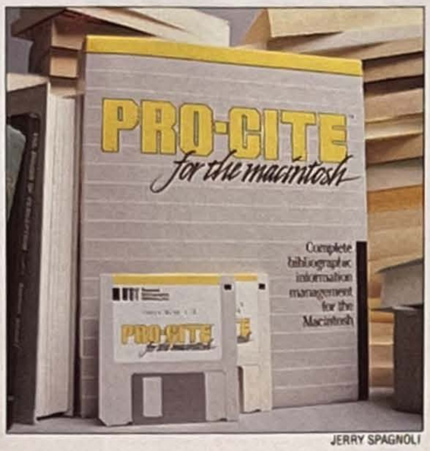
Author
G. Kurtin
J. Dawson
Year
1976
Title
The Roman alphabet
Series Editor
Series Title

The EndNote data-entry form has a pop-up menu that reveals available reference types.

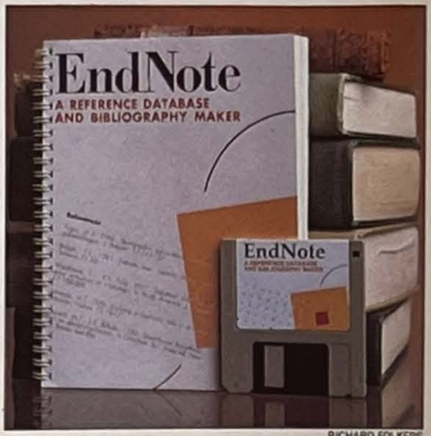


Current Search Expression is
AUTH="Hamilton" AND DATE≥"1985"
☐ QuickSearch
10/10

Pro-Cite offers sophisticated search capabilities.


PRO-CITE
for the macintosh
Complete bibliographic information management for the Macintosh

JERRY SPAGNOLI



RICHARD FOLKERS

Pro-Cite 1.3

Personal Bibliographic Software Inc.
P.O. Box 4250
Ann Arbor, Mich. 48106
(313) 996-1580
List price: **$395**

+ Large capacity; wide variety of data-entry forms and predefined format styles; sophisticated search capabilities; can share files with IBM version.

− Large and complex; not suited for small- to medium-scale research work; bibliographies format slowly.

EndNote 1.0

Niles & Associates
2200 Powell St., Suite 765
Emeryville, Calif. 94608
(415) 655-6666
List price: **$129**

+ Large capacity; desk accessory provides access to database from within word processor; formats in-text citations and attaches bibliography to documents; very readable documentation.

− Only 15 reference types available; manual lacks reference section; manual's index is inadequate.

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☐ 11. Architecture, Engineering
☐ 12. Research & Development
☐ 13. Graphic Arts
☐ 14. Communications: Publishing, Advertising, Public Relations, Promotion
☐ 15. Government: Federal
☐ 16. Government: Non-Federal
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☐ 19. Finance: Banking, Accounting, Insurance, Real Estate
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☐ J. Education/Training
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☐ L. Consulting
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☐ B. Reseller: resold per year __________ (specify quantity)
☐ C. Consultant: purchased by your clients through your firm's recommendations per year __________ (specify quantity)

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☐ 03. Under 100

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(Write in accurate quantity for all that apply)

	Currently Owned (Quantity)	Plan to Buy (0-12 Months) (Quantity)
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02. Macintosh SE		
03. Macintosh Plus		
04. Macintosh (Other)		
05. IBM/Compatible Micro		
06. Other Micro		
07. Workstation (e.g., Apollo, Sun)		
99. Other		

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☐ 03. Other
☐ 09. None

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☐ 03. 50-99
☐ 04. 20-49
☐ 05. 10-19
☐ 06. 4-9
☐ 07. 1-3
☐ 09. None

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☐ 10. Local Area Networks
☐ 11. Modems
☐ 12. Micro/Mini/Mainframe Links
☐ 13. Communications Software

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☐ 20. Laser Printers
☐ 21. Color Printers
☐ 22. Color Monitors
☐ 23. Hard Disks
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IINTX in about a minute. The PageMaker file printed 40 percent faster on the LaserWriter IINTX than it did on the LaserWriter IINT. TIFF files printed out in the same time on the LaserWriter IINT and IINTX, and slightly slower on the BLP.

Conclusions. All three printers have reason to be recommended. Apple has the edge in terms of modularity with the ability to upgrade to the high-performance LaserWriter IINTX.

The LaserWriter IINTX has speed and

Mac can send them to the printer at the right time. The files take up a lot of space if you use many typefaces in your work.

In addition to the space problem on the Mac, there is a memory problem inside the printer that affects the page-imaging process. The more downloadable fonts you use, the longer it can take to print because faces must be swapped in and out of memory, if it prints at all.

Both GCC Technologies' BLP and Apple's LaserWriter IINTX offer a solution to this problem with the addition of a SCSI port that

not going to be helpful. The time savings, even for long documents with a few downloadable typefaces, is minimal. Companies that maintain and use large libraries of fonts, however, will probably find that purchasing one of these printers is justified by this feature.

If you expect to rummage through the back room and find that old SCSI drive no longer in use, intending to hook it up to your printer, you will most likely be disappointed. The PostScript-SCSI interface is different from the Mac-SCSI setup (although the con-

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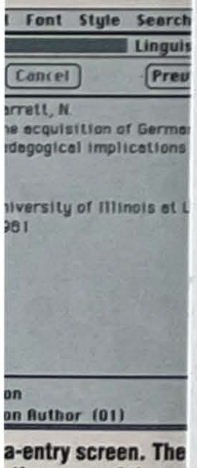

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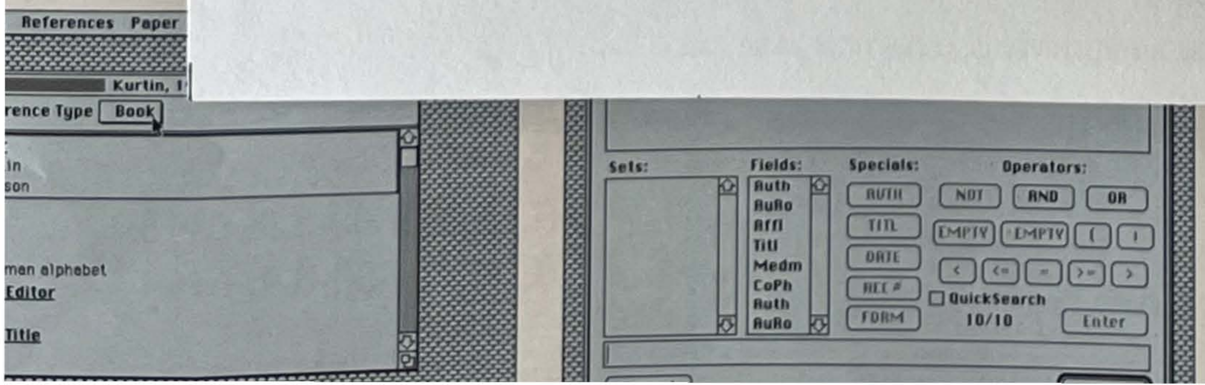

used in MacWrite or WriteNow, any database text in 12-point Geneva Plain takes on the characteristics of the text next to which it is pasted. All other text retains its formatting, making it possible to include non-standard characters like Greek letters or symbols in citations.

EndNote's clearly written documentation does a nice job of explaining how the program operates. It does not, however, serve well as a quick reference because it lacks a section describing all of the

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REVIEWS

LASER P

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LASER PRINTERS

Continued from Page 32

port allows peripheral devices like sheet feeders and collators to be connected. Few devices are available that can use this option, but the number should grow fairly quickly.

Individually, the three printers overlap on a few issues. The standard configuration for all of the printers is 1 Mbyte of ROM and 2 Mbytes of RAM. The LaserWriter IINT is the only printer of the group that is fixed at this memory setup. The BLP can be upgraded to 4 Mbytes of RAM, while maximum memory for the LaserWriter IINTX is 12 Mbytes.

The same font set found in the LaserWriter Plus is present in the LaserWriter IINT, the LaserWriter IINTX and the BLP. In addition, GCC adds another font family, Helvetica Compressed, to the BLP ROM. The LaserWriter IINTX's expansion capabilities are furthered by a single slot that is intended for a font card.

The BLP and the LaserWriter IINTX also include the ability to attach a hard disk via their SCSI ports. This feature allows users to store fonts on the hard disk that are not in the printer's ROM. Fonts located on the hard disk do not have to be downloaded from the Mac, saving time and space on any of the Mac's disks (see story below for more information on this feature).

We found that the print quality of both print engines was very good, especially when compared with the earlier LaserWriters, which printed streaky blacks and had more dropouts on type, especially with low toner. All three printers are able to print crisp, clean text, even at small point sizes.

Performance. To get an idea of the performance of each of the three printers, we measured the time it took to print a range of documents. We tested Microsoft Word documents that contained both downloadable fonts and ROM-based fonts, as well as PICT2 (MacDraw II), PostScript (Adobe's Illustrator 88) and Tag Image File Format (Silicon Beach Software's Digital Darkroom). In addition, we also printed a complex 30-page document from Aldus PageMaker that contained elements of all the other tests (see chart on Page 32 for details).

We found that the BLP and the LaserWriter IINT were roughly comparable in all of the tests, although the BLP was slightly faster in most cases. The BLP was, on average, 40 seconds faster when printing the PageMaker document and almost a minute faster in printing the PostScript image. Some of the speed difference can probably be attributed to the BLP's use of Version 49.2 of PostScript, which is more current than the Version 47.0 of PostScript found in the LaserWriter IINT and LaserWriter IINTX. The BLP's 68000 CPU also runs at 12.5 MHz, a tad faster than the 11.5 MHz rating of the LaserWriter IINT. Whatever the reasons, however, the BLP was more than a match for its higher-priced competitor.

The LaserWriter IINTX, on the other hand, blew the other two machines out of the water. The addition of the 68020 processor adds a new dimension to printing. MacDraw II files that took almost two minutes to print on the other printers came out of the LaserWriter IINTX in about a minute. The PageMaker file printed 40 percent faster on the LaserWriter IINTX than it did on the LaserWriter IINT. TIFF files printed out in the same time on the LaserWriter IINT and IINTX, and slightly slower on the BLP.

Conclusions. All three printers have reason to be recommended. Apple has the edge in terms of modularity with the ability to upgrade to the high-performance LaserWriter IINTX.

The LaserWriter IINTX has speed and expandability far beyond any other PostScript printers we have tested. It carries a high price tag, but professionals with high-volume or time-sensitive needs should be able to justify such a machine.

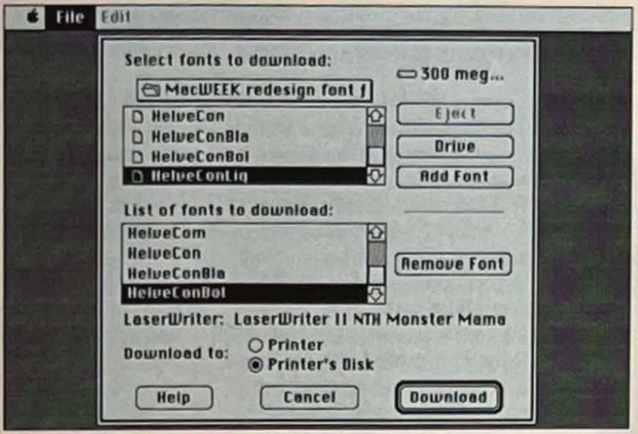
It may be a while before the LaserWriter IINTX's potential is truly realized: There are problems getting the 4-Mbyte RAM upgrade now, and the font expansion card slot and ADB peripherals market has yet to materialize in any big way. These problems should clear up, though, and the printer is impressive even in Apple's standard configuration.

While GCC does not offer a machine in the same class as the LaserWriter IINTX, the company has more than a match for the LaserWriter IISC and the LaserWriter IINT with its PLP and the BLP. In terms of performance and price, GCC comes out on top of or equal to the Apple machines.

The BLP's extra features, like the hard disk capability and expanded memory, set it apart from the LaserWriter IINT. Its lower price also makes it very attractive for users on a budget. Although we have reservations about how the toner is changed, you should be able to head off any major problems with a little care.

The LaserWriter IINT was less memorable than the other two. Its main strength is that it can be upgraded to the LaserWriter IINTX, which means that users can pace their needs with their pocketbook. Unfortunately, by the time you may be ready to move up to a LaserWriter IINTX, other 68020-based printers might be around that offer better price/performance ratios than the LaserWriter IINTX.

The LaserWriter IINT is not a bad printer; it is a safe buy, especially for those who feel secure purchasing equipment with the Apple logo on it. Remember, however, that that logo costs a bit more. GCC Technologies' BLP, as well as printers from other vendors, sell for less than the Apple model. □



Select fonts to download:

MacWEEK redesign font ƒ

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HelveConBla
HelveConBol
HelveConLiq

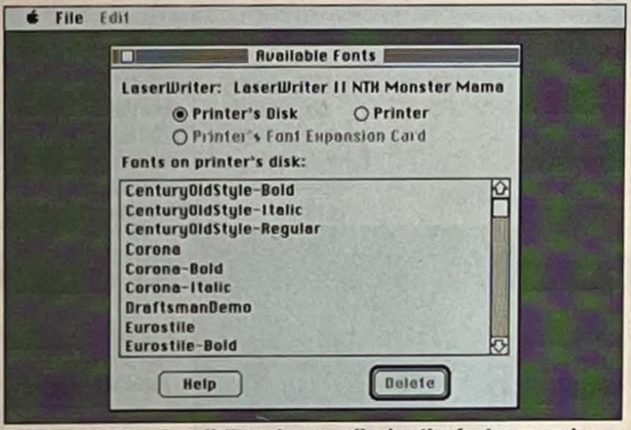
List of fonts to download:

HelveCom
HelveCon
HelveConBla
HelveConBol

LaserWriter: LaserWriter II NTH Monster Mama

Download to: ○ Printer ● Printer's Disk

Apple's LaserWriter Font Utility allows fonts to be sent to (or removed from) the hard disk attached to the printer.



LaserWriter: LaserWriter II NTH Monster Mama

● Printer's Disk ○ Printer
○ Printer's Font Expansion Card

Fonts on printer's disk:

CenturyOldStyle-Bold
CenturyOldStyle-Italic
CenturyOldStyle-Regular
Corona
Corona-Bold
Corona-Italic
DraftsmanDemo
Eurostile
Eurostile-Bold

The LaserWriter Font Utility also can display the fonts present on a printer's hard disk, ROM or font-expansion card.

BIBLIOGRAPHY

Continued from Page 34

that it might make you want to begin your own research project.

Other options. If your needs are modest but you still want to be able to produce correct bibliographies easily, you might want to look at Publish or Perish from Park Row Software of San Diego. Publish or Perish has only a single predefined data entry form with 12 fields that hold up to 240 characters each and a notes field that will hold unlimited text.

What distinguishes Publish or Perish from a do-it-yourself database is its report capabilities. Its predefined literary and scientific bibliography formats accommodate various reference types, inserting the appropriate punctuation only when a field contains data. It also lets you design your own formats. The program offers only rudimentary search capabilities, and one file can hold a total of 500 references.

Conclusions. For the individual, EndNote provides great versatility at a good price. It's easy enough for someone who only writes the occasional paper, and it has the features and capacity to meet the needs of the serious researcher. For university or business research departments, the power and complexity of Pro-Cite are needed. However, getting the most out of this program will require a serious commitment of time to learn how to take advantage of its many features and to create a database large enough to make use of them.

Both Pro-Cite and EndNote acknowledge in their documentation that some specialized reference types will require the user to manually tweak the output to get it to conform to formatting specifications. But both programs take care of all the major and most of the minor formatting details, letting the user concentrate on content and accuracy instead of spaces and semicolons. □

Gerry Lukos is an assistant editor at the H.W. Wilson Company, a publisher of library reference materials.

Hard disk speeds printing of downloaded fonts

When the only fonts you were able to use were Times, Helvetica and Courier, life was fairly simple. Things change, however, and many of us got sick of reading documents printed in those few typefaces or the additional ones found in the LaserWriter Plus and most PostScript printers shipped today.

Adobe and a number of other companies solved that problem with font libraries that include a wide range of PostScript typefaces, but these typefaces must be loaded into the printer's memory to be used.

The Mac-LaserWriter team has a mechanism for determining whether a font file needs to be downloaded when a document is printed, but this process means that you must keep font files in your System folder so that the Mac can send them to the printer at the right time. The files take up a lot of space if you use many typefaces in your work.

In addition to the space problem on the Mac, there is a memory problem inside the printer that affects the page-imaging process. The more downloadable fonts you use, the longer it can take to print because faces must be swapped in and out of memory, if it prints at all.

Both GCC Technologies' BLP and Apple's LaserWriter IINTX offer a solution to this problem with the addition of a SCSI port that allows hard disks to be connected to the printer for font storage. Although older typesetting systems have used mass storage devices for years to offload large font files, this is a new feature for the 300-dpi PostScript printer.

When a hard disk with fonts is connected to a printer, printing time can be reduced considerably if you are using large numbers of fonts in a document. The same file with 12 downloadable fonts that took almost four minutes to print on the BLP without a hard disk took slightly more than two minutes to print when a hard disk was connected to it. The times were similar for the LaserWriter IINTX, although the differences were not as dramatic, considering that the IINTX is a much faster printer.

For users with only a small number of downloadable fonts, a hard disk is probably not going to be helpful. The time savings, even for long documents with a few downloadable typefaces, is minimal. Companies that maintain and use large libraries of fonts, however, will probably find that purchasing one of these printers is justified by this feature.

If you expect to rummage through the back room and find that old SCSI drive no longer in use, intending to hook it up to your printer, you will most likely be disappointed. The PostScript-SCSI interface is different from the Mac-SCSI setup (although the connectors are similar), and most SCSI drives on the market will not work when hooked up to either printer. Apple's own SCSI hard drives reportedly will work, although we were unable to verify this. Drives by SuperMac and CMS Enhancements will not work, although they might work in the future. (SuperMac was testing new ROMs for its DataFrames when we called.) The only drive we could get to work was the latest FX series from GCC.

SCSI drives used for font storage are formatted differently than drives hooked to the Mac, so you will not be able to move your drive around between the printer and the Mac without reformatting it and losing information stored on the unit. Both GCC and Apple provide a utility that formats the drive, but GCC's application doesn't provide any way to load fonts onto the drive, telling you in the manual to "use the utility provided with your fonts." Most of the utilities we found could only load one font at a time onto the drive, which made loading fonts a tedious and lengthy process.

Apple's LaserWriter Font Utility, however, is wonderful. It not only formats the drive, but it also allows fonts to be downloaded to a drive in batch mode. The utility also can print a list of the available fonts and font samples on the drive, as well as delete specific fonts from the drive. We hope that Apple will release this utility for general use as it does with Font/DA Mover and other applications.
— By Rick LePage

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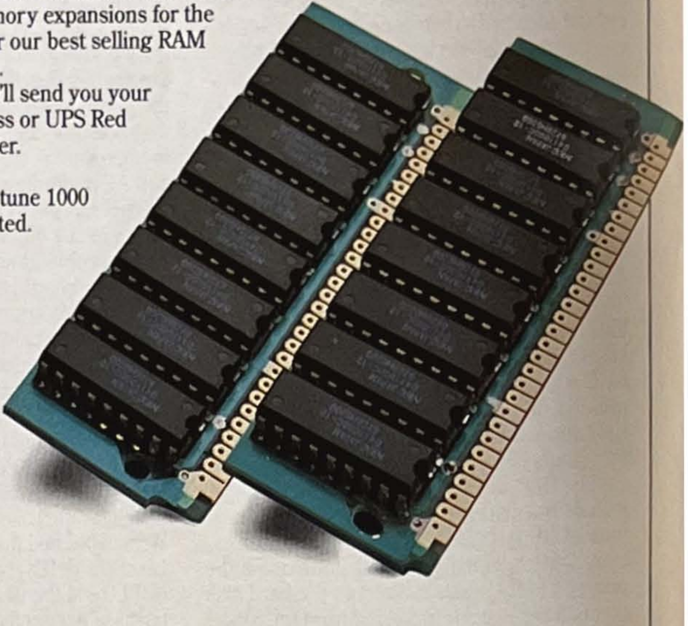

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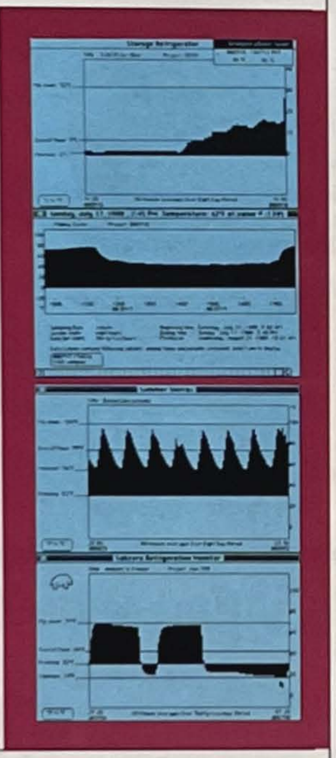

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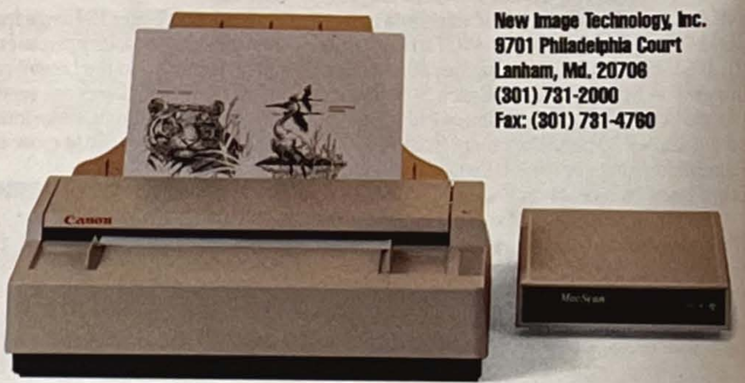

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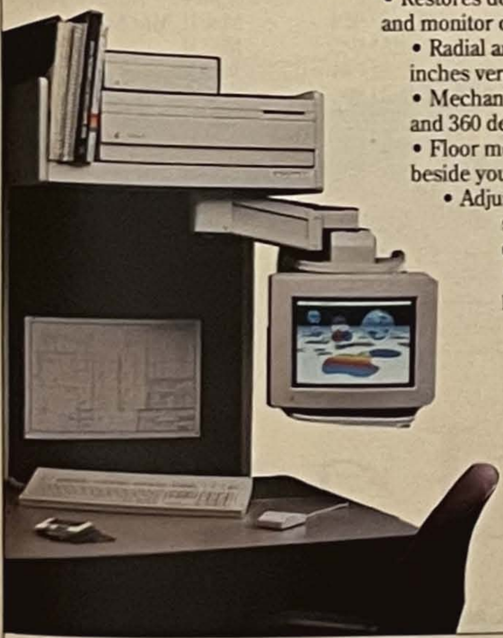

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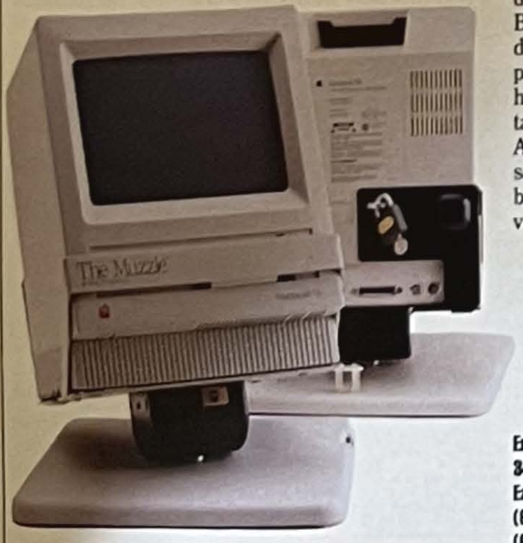

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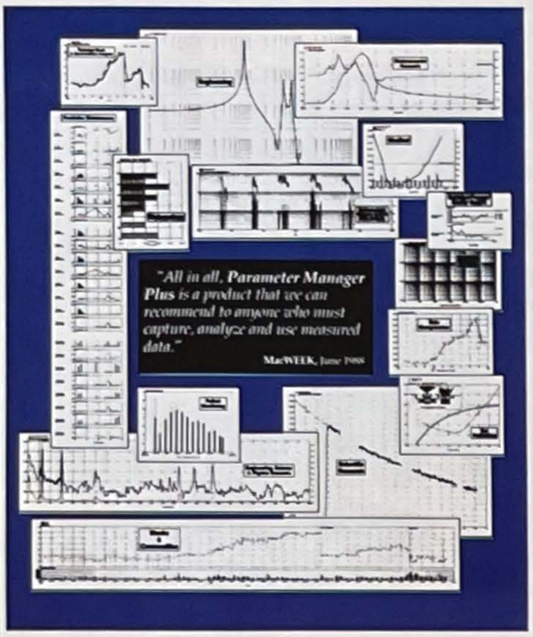
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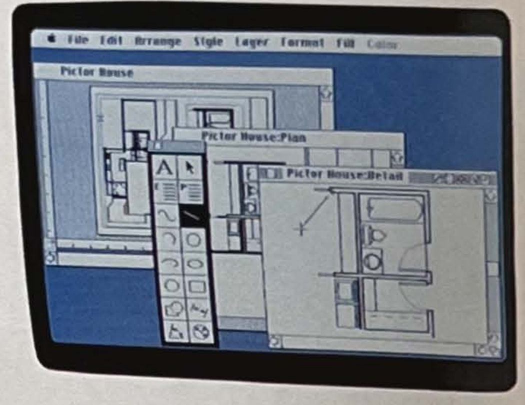

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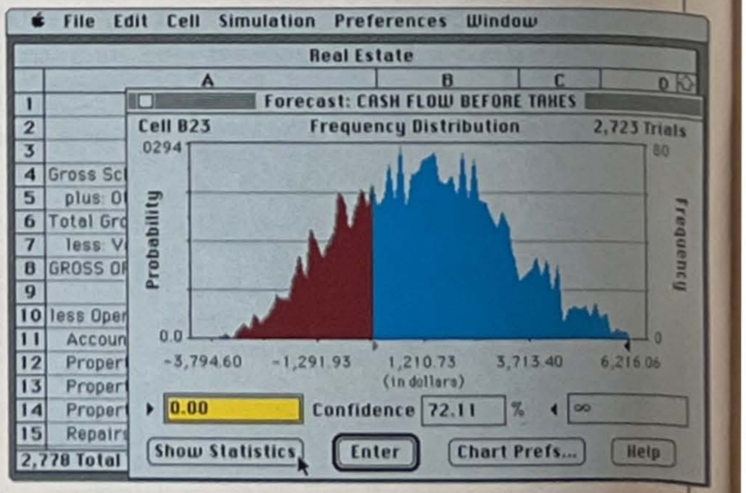

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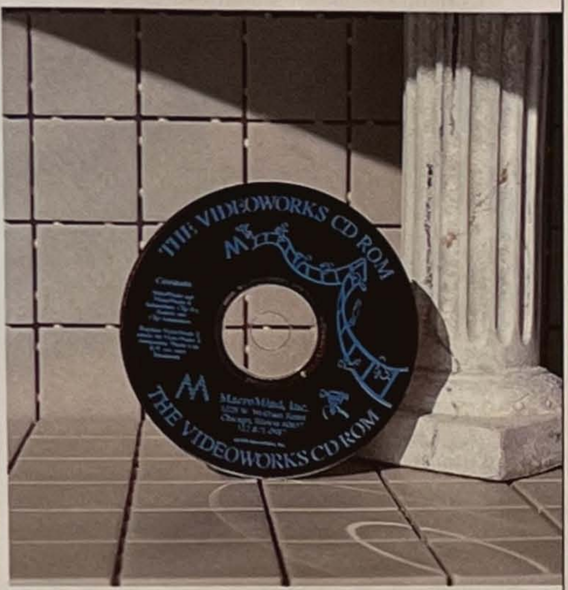

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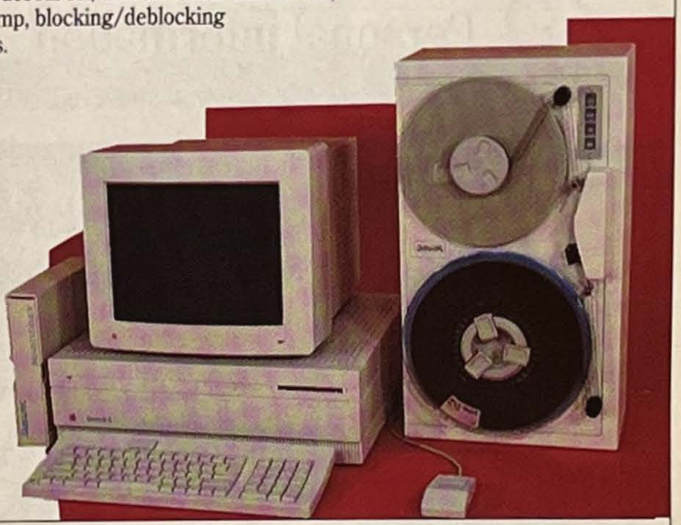

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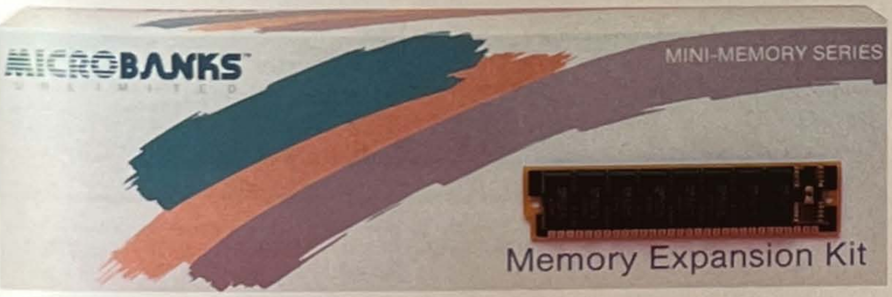

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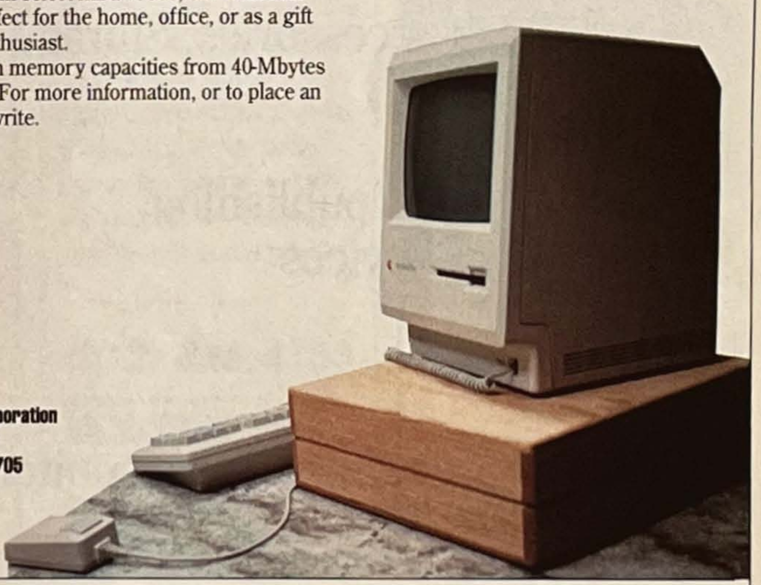

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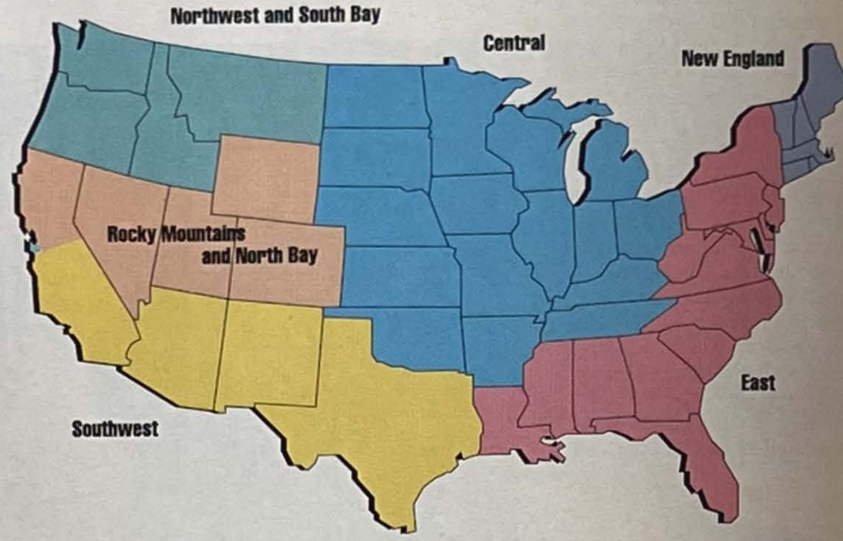

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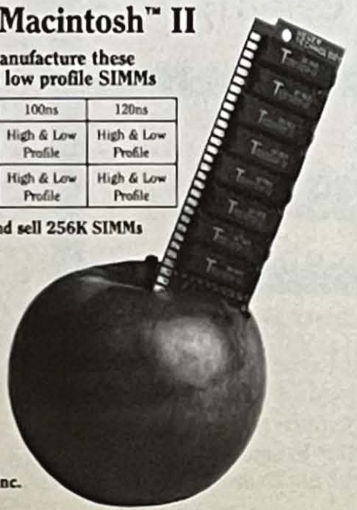

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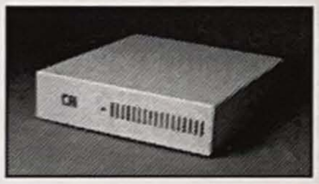

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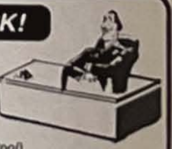

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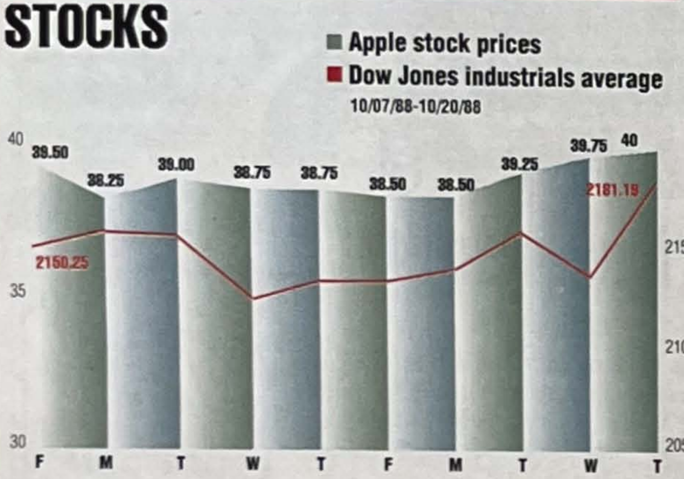

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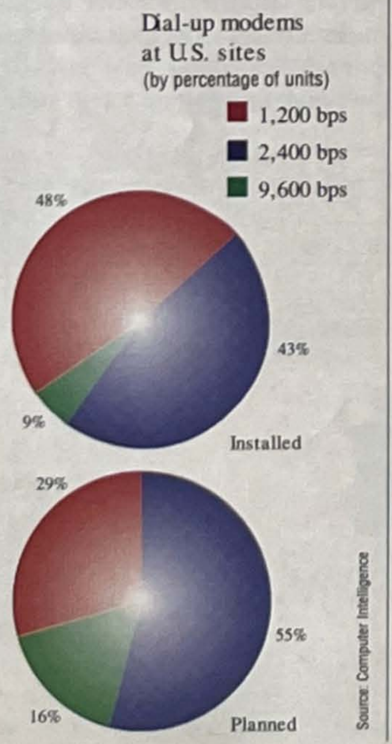
MARKETWEEK

Fast move to fast modems

A recent study by Computer Intelligence Corp. of La Jolla, Calif., of business sites with medium-to-large computer installations shows how rapidly they are shifting from 1,200 bps to higher speed dial-up modems. Although 48 percent of the installed modems are 1,200 bps and only 43 percent are 2,400 bps, most modems bought within the next year will be 2,400 bps or faster. In fact, 55 percent of the modems these installations plan to buy within the next year will be 2,400 bps, and 16 percent will be 9,600 bps or faster. High-speed modems at speeds of 9,600 bps or greater are now only 9 percent of the installed base.

— By Griffin Dix



Source: Computer Intelligence

Apple sales top $4 billion

Yearly income soars 84 percent

BY CLAIR WHITMER

CUPERTINO, Calif. — Apple last week released the final tally for fiscal 1988, and the results were slightly better than most analysts had predicted.

Net sales for the year, which ended Sept. 30, amounted to $4.1 billion, a 53 percent increase from the $2.7 billion it recorded in fiscal 1987.

Net income increased even more, soaring 84 percent from $217.5 million last year to $400.3 million. The year that included the stock market crash saw Apple's earnings per share go from $1.65 per share to $3.08 per share.

"Things continue to go Apple's way," said Peter Rogers, an analyst at Robertson Colman & Stephens in San Francisco.

In a prepared statement, Apple chairman and CEO John Sculley attributed the results largely to increased sales of the Macintosh, although Apple II sales also were up.

Results for the fourth quarter also were strong but unsurprising. Net sales for the quarter climbed to $1.17 billion, a 49 percent increase over the same period last year. This figure compares favorably to third-quarter 1988 sales, which stopped short of the $1 billion mark.

Net income for the fourth quarter rose 51 percent to $107.9 million, or $0.84 per share. That increase, which marks Apple's fifth quarter of more than 50 percent earnings growth, exceeded the already optimistic predictions of many investment analysts.

Rogers estimated that Macintosh unit sales were up 45 percent for the period just ended, saying that Mac II sales account for a quarter of those sales. According to Sculley, both unit sales and average system prices of the Mac II have increased every quarter since its introduction.

The only downturn in the quarter's results was in gross profit margins, which came in at 49.2 percent. That was the lowest level since 1985, said Rogers. Sculley's statement, however, pointed out that the product price increases announced last month should mitigate the margin pressure.

Operating margins, on the other hand, were relatively unchanged from last quarter due to a considerable cutback in marketing expenses, according to analyst Michele Preston of Salomon Brothers in New York.

"The bottom line is that these guys are very interested in profitability and are good at managing it," said Rogers.

Apple representatives have predicted a 25 percent to 30 percent revenue growth for next year, according to Preston, but she added that this estimate is low in light of the recent price increases. Her company is projecting $4 per share in earnings next year.

Microsoft Corp.'s earnings also rose at a dizzying pace, according to the financial report it released last week for the first quarter of fiscal 1989. Net revenues came in at $176.4 million for the quarter, a 74 percent increase over the same quarter last year. Net income was reported at $36.6 million, a 72 percent jump from last year. ☐

NeXT faces challenge in education market

BY EMILY BROWER

PROVIDENCE, R.I. — The computer crowd may have oohed and ahhed at the technical somersaults of Steve Jobs' new computer, but NeXT's target market of college educators and administrators isn't loosening the purse strings just yet.

Nor are they abandoning the close ties with Apple that they have forged since the Mac was introduced in 1984. Apple holds a 35.3 percent share of the higher-education market, and more than a third of all Macs shipped have been sold to this market, according to International Data Corp. of Framingham, Mass.

Institutions like Brown University in Providence, R.I., will continue to work with the Mac despite commitments to develop academic software for NeXT. Brown plans to develop a sophisticated language study system using NeXT, but, said Brian Hawkins, vice president of computing and information services, "in foreign language we're still heavily using Mac IIs."

And NeXT may not hold up well against education discounts that put the Mac within the financial reach of students. "We'd love to see Jobs make it affordable at the student level, but this is definitely not a student machine," said Ira Fuchs, vice president for computing and information technology at Princeton University in Princeton, N.J.

Jobs plans to sell his $6,500 machine without discounts and has announced no plans for donating units to the universities. "It's certainly different from the way we started with Apple," said David Bantz, director of computing in the humanities for Dartmouth College in Hanover, N.H.

If estimated purchase plans are any indication, NeXT is likely to have spotty distribution next year. Directors of academic computing have said they are taking an empirical approach, waiting to experiment with the NeXT machine before committing to volume purchases.

"Initially, we plan to purchase about 24 machines. Other purchases will depend on the actual hands-on experience we get operating the machine," said Gregory A. Marks, deputy vice provost for information technology at the University of Michigan in Ann Arbor, Mich.

"I have planned purchases of about 50 machines for the end of this academic year that will end up in the hands of faculty and in computer clusters. Future purchases depend on what the faculty think about the machine," said Fuchs.

Jobs' no-donations policy may prove an added deterrent to widespread deployment of the NeXT machine in higher education. Computer vendors traditionally donate computers to encourage development, according to several academic computing directors.

For example, at Dartmouth, scientific courseware is being developed on 30 IBM RTs, 20 IBM 6152s and five Sun 3s, all of them donated, according to Mark Franklin, project director. "There are a bunch of Macs on campus, but we discovered that they are not capable of scientific and technical computing, so we decided to put together a project to bring more powerful equipment on campus," Franklin said. As for NeXT, he said, "It's hard to justify buying equipment when you can get it for free."

But Hawkins, who serves on NeXT's academic advisory board, said that the NeXT policy on donations could change in the future. In the meantime, NeXT is sure to find a niche in music and language study departments, which will get the greatest benefit from the machine's sophisticated sound technology, Fuchs predicted. "I'm sure the music department will be in a rush to get one of these computers," he said. ☐

Mashima leaves Claris

MOUNTAIN VIEW, Calif. — As manager of Apple-label software, Kyle Mashima seemed an obvious candidate for a position at Claris Corp. when the Apple software spinoff was created.

But after an 18-month tenure as director of product marketing for Claris, Mashima has decided to call it quits.

"It was time to move on," said Mashima, who announced his resignation from the Mountain View, Calif., company earlier this month. "It was an amicable departure, but there were philosophical differences."

Mashima said he plans to become "a full-service consultant, from design to getting the product to market.

"I've seen a lot of people come in with products that are good ideas but not very well-designed," Mashima said. "I plan on consulting primarily in the area of helping small developers do design work on their interfaces and helping them with their business plan."

Claris officials declined to comment on Mashima's move. ☐

AppleCD SC off to a slow start

Dealers say sales are disappointing

BY CLAIR WHITMER

SAN FRANCISCO — When Apple introduced its AppleCD SC in March, the company's declared intention was to break the chicken-and-egg dilemma that has long plagued the CD-ROM industry: With few players sold, software companies have been reluctant to make the investment required to publish CD-ROM applications; with few discs available, only a handful of technology buffs saw a reason to buy the drives.

Although industry observers have said it's too early to make a final judgment, an informal survey of dealers makes it clear that the Apple drive hasn't yet broken the cycle. "To say they aren't selling well is charitable. We've sold maybe one or two," said Dan Neesley, president of North Shore Computers of Milwaukee.

"We carry it and have a few in stock, but I don't know of any that have gone out the door," said one Apple dealer in Los Gatos, Calif.

The disappointing debut of the CD SC comes at a time when the CD-ROM industry as a whole is finally starting to pick up, according to John Gale, president of the Information Workstation Group of Alexandria, Va.

The worldwide installed base of CD-ROM drives from all vendors reached 54,000 last year, according to analyst Robert Gaskin of Dataquest, a San Jose, Calif., market research company. Approximately 75,000 more are expected to be sold in 1988.

But the recent emergence of other optical-storage technologies that seem to offer greater speed and flexibility has cast new shadows over the future of CD-ROM. NeXT Inc. this month announced that its workstation will be equipped with an erasable magneto-optic drive, and other computer vendors may follow suit (see related story, Page 4).

But the AppleCD SC's market problems precede the recent announcements. Many dealers attribute the slow sales of the $1,199 drive to the paucity of application discs for it. In a recent issue of the monthly newsletter CD Data Report, editor and publisher Linda Helgerson counted less than 30 announced titles from 22 publishers.

Some of these, such as the much-publicized Whole Earth Catalog from Broderbund Software, have yet to ship, and no large software publisher has announced a CD-ROM application for the Mac. In contrast there are more than 200 public titles for MS-DOS based drives, according to Gaskin.

Gale said he anticipates that the software problem will be solved next year. He said that Apple has received a very positive response from systems developers, but that there hasn't been enough time to see the results of that enthusiasm.

MICHAEL KIENITZ/PICTURE GROUP

Dan Neesley of North Shore Computers has sold few AppleCD SCs.

In Helgerson's opinion, however, there are two other reasons that the AppleCD SC isn't making the best-selling peripherals list: its high price and the relatively late arrival of driver support for the High Sierra format. Both Toshiba and NEC have released CD-ROM drives for the Macintosh for less than $1,000.

Apple has done little to educate its user base about the benefits and uses of CD technology, industry observers said. Although it had a big booth at the recent CD-ROM Expo in Chicago, the company hasn't launched a CD-specific advertising campaign, sponsored any special dealer-education or promotion programs, or produced a sample disc to be bundled with the drive.

Apple has also continued its usual policy of authorizing only its certified dealers to sell the product. Some observers said that this decision indicates a lack of understanding of what CD-ROM is all about.

"[Apple] seems to be looking at the CD-ROM drive as just another peripheral. But the CD-ROM market is different; it's more like books," said Richard Buchanan, business manager for Abt Books Inc. of Cambridge, Mass.

His store carries disc titles along with its book inventory and had wanted to carry the AppleCD SC. Since Apple's dealer-only rules prevent this, Abt carries the Toshiba drive instead.

But the fate of CD-ROM for the Mac doesn't necessarily depend on sales of the AppleCD SC. Egghead Discount Software has begun to distribute the NEC Intersect drive for the Mac, as well as a handful of CD titles. And discs continue to be produced regularly, if slowly. ☐

Apple prepares Christmas campaign

BY CLAIR WHITMER

CUPERTINO, Calif. — Following its plan of emphasizing product value more than price, Apple has launched its annual dealer promotional campaign for the lucrative Christmas season.

Called "Apple Makes It Easy," the program is very different from last year's campaign, which focused on price rebates, said Kevin McDonald, Apple's home education marketing manager.

Like the newly launched Earned Investment Program, which offers rebates to dealers for adding support-oriented staff and facilities, the Christmas campaign is intended to boost sales by increasing the value of the product rather than by decreasing the price.

CHANNEL NEWS

Dealers are now being encouraged to pick a target audience and a particular line of machines they want to promote and then build value-added "solutions" around them. Apple in turn will provide extra money from the AppleFund incentive program, said McDonald, as well as new marketing tools to back the dealer-designed campaigns.

One such tool is a new national television ad series that premiered last week during the World Series. Among the ads scheduled for this quarter are several 30-second spots that will be dealer-customizable, with Apple providing 15 seconds of copy and leaving the remaining time for tag lines produced by the resellers.

A more direct aid is a 90-day extended payment plan, or "floor-planning," which allows dealers to pay for purchases made between Oct. 3 and Dec. 2 in 90 days instead of the usual 60.

Apple is also providing extra financing help directly to customers by delaying until February requests for payment or finance charges on any purchases made between Oct. 22 and Jan. 3.

Other carrots intended to lure customers into dealerships include an extension of the credit limit to $3,500 and a direct mailing to notify more than 2 million households that they have pre-approved credit for Apple products.

Once the customer has decided to buy, dealers will earn extra AppleFund dollars by pushing the Apple IIc Plus, the IIGS or the Mac SE. Microsoft Works 2.0 for the Mac and Claris' AppleWorks GS are the two software packages featured in the Christmas promotion.

Apple is not providing incentives for the Mac Plus because of low availability of the product, said McDonald, but back orders will begin to be filled.

Dealers are pleased with the changes in the campaign, McDonald said, because they have more control over what products are promoted and what methods are used. "The program isn't being forced down their throats," he said. ☐

IBM veteran takes control of Apple networking

BY JON SWARTZ

CUPERTINO, Calif. — It took Apple nearly half a year to find a vice president of networking and communications, but the wait appears well worth it.

That's because the man who filled the position, Don Casey, a 21-year IBM veteran, brings considerable networking expertise with him. "Without doubt, our most significant hire from IBM," said Peter Friedman, group market manager for Apple's business systems marketing.

"I came to Apple because I wanted to work at Apple," Casey said. "The opportunity to take this beautiful product, the Macintosh II, and improve its ability to communicate is exciting."

Before starting at Apple on Aug. 1, Casey spent half of his life at IBM, largely in senior positions in communications and in the company's Systems Products division. Casey's last position was vice president of communications hardware development with IBM's Communications Products division in Raleigh, N.C., where he directed the company's networking and telecommunications hardware development.

At Apple, Casey has assumed control of the company's networking and communications departments, including research, development and product marketing. "I'll be working closely with Randy Battat, Jean-Louis Gassée and Ed Birss on giving our customers what they want in terms of communications products," Casey said.

The job of vice president of networking and communications, announced in January by Apple CEO John Sculley, is considered critical in Apple's ambitious plan to make the Mac the best-networked computer available. Sculley, in fact, has repeatedly called 1988 "Apple's year of communications."

Although he still is getting acclimated to his new job — he hadn't used a Mac regularly until June 16 — Casey appears remarkably at ease in his modest Cupertino, Calif., office. Casually dressed, he stressed that computer companies are "living in a multivendor world."

"It is important to support multiple protocols like OSI (Open Systems Interconnection), ISDN (Integrated Systems Digital Network) and X.25, as well as single protocols like SNA (Systems Network Architecture) if AppleTalk or any network system is to continue to grow," Casey said.

In addition to bringing his vast knowledge of IBM's SNA and Systems Application Architecture to Apple, Casey brings a fresh networking perspective, industry analysts said.

"He brings a large-systems perspective to Apple," said Nina Burns, vice president and senior analyst at Infonetics Inc., a Santa Clara, Calif., market research company. "Instead of looking from the workstation viewpoint, he sees things in terms of networking and large installations."

But more than two decades at IBM haven't left Casey with a case of Big Blue tunnel vision. "It may sound juvenile, but I fell in love with the Macintosh when I first started to use it," he said. "Its sounds, graphics and especially HyperCard are fantastic." ☐

JEFF REINKING

Don Casey is Apple's new vice president of networking and communications.

Publishing for the rest of us

Quark, Springboard aim at new niche

BY CONNIE GUGLIELMO

DENVER — Quark Inc. and Springboard Software have taken desktop publishing to a new low.

Within the past two months, both companies have released new software for what they describe as the low-end desktop publishing market. Although each product takes a different approach, their target is the same: Mac word processing users who want to turn out well-designed pages but who lack desktop publishing and graphics expertise.

The market niche that QuarkStyle and Springboard Publisher are trying to fill is a new one. The big three in Mac desktop publishing — Aldus Corp.'s PageMaker, Letraset USA's Ready,Set,Go! and Quark's own XPress — have reached with increasing success for the professional publishing and graphic arts markets. But as the power of these applications has increased, they have steadily become more complex and, some have said, intimidating to novice or casual users. And their retail prices have crept upward, to $795 for PageMaker and XPress and $495 for Ready,Set,Go!

The result, industry analysts and publishers of the new programs said, is that an important part of the original constituency of the desktop publishing revolution — users who produce publications only occasionally and have little understanding of, or need for, the advanced typographical and graphics manipulation features of the high-end programs — has been left behind.

Quark and Springboard hope to reach this audience with products that are less sophisticated but cheaper and simpler to use.

Quark calls the category "instant publishing." The company is banking on QuarkStyle, a $295 stand-alone program that contains a built-in word processor and more than 70 templates created by eight prominent graphic designers, including Roger Black and John Van Hamersveld, designer of more than 300 album covers, including the Beatles' "Magical Mystery Tour" cover.

"QuarkStyle is designed to be a page-finishing tool for word processing," said Allan Ayars, vice president of sales and marketing for Quark. "It takes graphic arts down to the next tier and provides graphic arts finishing for the typical word processing user. Content-oriented people can concentrate on the content without worrying what the final copy will look like."

"I think it's an interesting concept. [Quark] realizes that not everyone needs to be a renaissance man," said Craig Cline, associate editor of the Seybold Report on Desktop Publishing in Malibu, Calif. "It also puts the layout and design under the control of a few people. When you look at how an organization works, it makes sense to have these canned formats."

With Springboard Publisher, Minneapolis-based Springboard Software sees itself providing the first integrated desktop publishing program for users with little or no design skills.

The $199.95 program combines a full-featured word processor, page-layout capabilities, advanced text handling controls like leading and kerning, as well as a MacPaint-like graphics module with image-editing controls.

"We believe that this is true desktop publishing software. It's just not aimed at professional users," said Tom Kuder, product manager for Springboard.

Kuder said that Springboard was encouraged to enter the market by Apple, which saw a gap in the features offered by word processing and desktop publishing programs.

Other Mac developers have noted the gap as well. Over the past year, word processing programs such as Ashton-Tate's FullWrite Professional have been touted for their page-layout and text and graphics-handling capabilities.

Quark Inc. is located at 300 S. Jackson, Suite 100, Denver, Colo. 80209; (303) 934-2211. Springboard Software Inc. is located at 7808 Creekridge Circle, Minneapolis, Minn. 55435; (612) 944-3915. ☐

Dove spreads its wings in search of new markets

Plans fax modem, video board and scanner interface

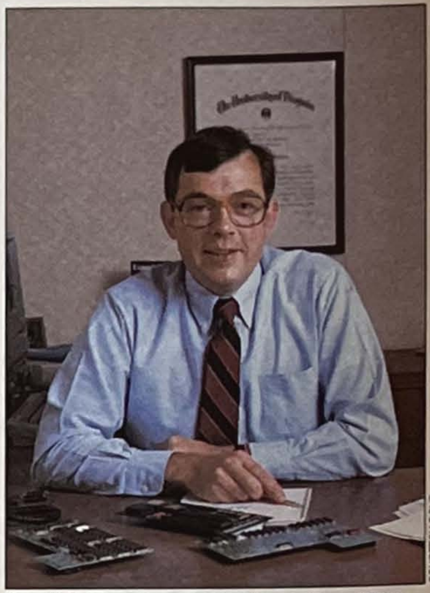
BY JONATHAN PERROW

WILMINGTON, N.C. — Back in 1985 when E. I. du Pont de Nemours & Co. Inc. was set against using the Macintosh, a product manager for nylon intermediates manufacturing at the chemical giant's Cape Fear facility took a risk and bought two 128-Kbyte Macs for the office.

Now David Valliere is the president and CEO of Dove Computer Corp., and the privately held company is broadening its presence in the Macintosh market from memory products to communications and video. In the coming year, he is looking forward to unveiling a fax modem, a video board and a scanner interface. These additions, he projects, will add up to $40 million in sales for the 1989 fiscal year, the company's fourth year of shipping products.

While still at du Pont, Valliere took a good look at the Mac 128K. "I instantly saw it was going to do well in management," he said. "I heard if you soldered more memory into the machine, you could get more value out of it, but the Mac wasn't going to be in business unless there was some way to expand its memory easily."

So in April 1985 Valliere took five other du Pont employees with him and set up shop here to produce the MacSnap line of snap-on memory upgrades for the Mac 128K. Today, MacSnap memory upgrades are available in nine configurations for the Mac 512K, Plus, SE and II, with prices ranging from $479 to $999. A SCSI interface is offered on some of the 512K enhancements.


COURTESY DOVE

David Valliere left du Pont to co-found Dove, which is branching out from RAM upgrades to communications and video add-ons.

"The memory shortage could have severely hurt us," Valliere said, but thanks to an accurate market forecast, Dove had its purchase orders in when the crunch hit. "Some of our suppliers started to renege on the agreements; some companies were not very ethical. But we survived pretty well anyway."

Memory products account for about 75 percent of Dove's $12.5 million in revenue in fiscal 1988, but Valliere said he expects that figure to drop to less than 50 percent in 1989. Back orders in 1988 for memory alone amounted to $8 million.

The original MacSnap served as a "bootstrap" for Dove to unleash products in two other market categories since 1986. Fastnet, the company's line of Ethernet controller adapters for the Mac II and SE, and the MaraThon family of accelerators flesh out Dove's three-pronged attack on the Macintosh market.

Helping Apple break into the federal market, Dove recently designed the MaraThon Serial/Parallel (SP) and the MaraThon MultiComm boards to offer parallel and RS-232 ports and a Centronix printer interface.

"Apple's target is to bid on contracts written for IBM PC-type specs," Valliere said. "With the MaraThon SP, you can make the Mac II an IBM look alike."

But in keeping with the company's original business plan, a fourth prong is being added to its attack. A black-and-white video board designed to run "a broad spectrum of monitors" will compete in a market full of "niche products designed to run only one particular monitor," Valliere said.

The board will be software programmable using logic-cell array technology, allowing a dealer to input the horizontal and vertical scan rate to fit practically any monitor, according to Valliere.

"This way you can have one board that will run everything from a high-resolution Princeton Graphics monitor, to a MultiSync, to a low-cost IBM PC-type monitor," he said.

In addition, a multifunction NuBus board containing a fax and data modem as well as a synchronous serial-port interface for the $995 Canon IX-12 Image Scanner will round out the Dove product line.

Dove Computer Corp. is located at 1200 N. 23rd St., Wilmington, N.C. 28405; (919) 763-7918. ☐

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Developers talk, Mac listens

MAC THE KNIFE

Did John Sculley get free World Series tickets as a reward now that Apple is doing so well? Who knows, but in spite of, or maybe as a means to, becoming a $4 billion company, Apple is surprising some developers with a few of its new policies as of late. Some favored developers get machines gratis, always have and probably always will. But some expecting a IIx opened the box only to find a naked motherboard. It's left up to the developer to find the rest of the box. Just how old is Sculley's snow blower, anyway?

How about a Mac II version of the objective C compiler that's to be bundled with the NeXT workstation? Developers claim the Stepstone Corp., which developed the product for NeXT, has told them to expect an introduction by the third quarter of 1989.

NeXT may think it has the only real erector set for programmers, if you discount HyperCard, which programmers in the Jobs camp view as a toy, and XCMDs, which they consider "horrible hacks." But according to Apple insiders, developers with visual programming interfaces for the Mac are coming out of the woodwork. And, of course, we all remember that NeXT's highly regarded Interface Builder was originally conceived and implemented on the Macintosh in ExperTelligence's LISP product.

Hints to the wise. Rumors of Motorola 88000 projects at Apple were flying furiously last week. Apple has hinted to developers to take a close look at the Tektronix 88000 board, the implication being that there's something to be learned that will be of use to Mac developers in the future. Stay tuned.

MORE II seems to be moving along right on schedule for its Nov. 15 ship date. And SUM, the Symantec disk and file-utility package, is exceeding a marketing manager's dreams, to the point that it's sometimes difficult to find it on dealer's shelves.

Development is also well under way on a Mac version of Q&A, the hot-selling intelligent database cum word processor for the MS-DOS world. Barring acts of God, you should see it by the end of second quarter.

While on the subject of product migration, Frame Technology, much in the news lately as a result of its development for the NeXT workstation, has now decided that it will be summer again before anyone will have the pleasure of shelling out a grand for a copy of FrameMaker Mac. In any event, just the threat of a Mac version of FrameMaker should get most of the Mac competitors back to their drawing boards to beef up their features lists.

Floppy for the rest of us. In answer to the burning question of how to conveniently remove one of those gorgeous new 256-Mbyte floptical disks on the NeXT workstation and insert another one to suck a file into the whopping 8 Mbytes of memory, the answer is that you can't, for the simple reason that once you boot from the drive, the disk can't be removed until the system is shut down. Apparently, NeXT hopes to get a disk-swapping utility out in time for the shipment of Version 1.0 of the operating system sometime next year.

In the meantime, maybe Jobs will give in to the public cries for a 1.44-Mbyte floppy disk — a small bit bucket compared with the floptical, but a lot cheaper, especially for developers wondering how to distribute their software.

Software marketing is not for the faint of heart. Just look what happened to Adobe's well-laid plans for a big announcement at Seybold that Illustrator would be split into two products: a low-end version to compete with MacDraw II and a high-end product with a revenue-producing high-end price. Then, according to a trusted Knife informant, Adobe suddenly dropped the plan just a couple of days before the conference was to start. Aldus partisans figure that someone at Adobe must have seen a beta of FreeHand II, but others scoff at the idea. Feature-packed FreeHand II, by the way, should be released within 60 days.

Theories and clarifications. Speculation continues about why Bill Gates has been so catty in his comments about Steve Jobs and his NeXT machine. One of the Knife's best-connected sources says the real reason for Gates' foul mood is that NeXT's otherwise-distinctive black cube logo is so similar to the packaging for Microsoft's hot-selling Works program for the Mac and the PC. Of course, that doesn't mean anyone's boning up on logo-infringement law.

Last week's item about Letraset buying AdMaker turns out to have been slightly ahead of its time. This week, there are indications that negotiations have completely broken down, and it therefore appears that the deal is off permanently, although the Knife's experience is that sometimes deals like this come back from the dead.

And, yes, anyone who asked already knew that those scanned images at the NeXT intro started life as TIFF files on a Sun. ☐

* * *

Nancy's still illegally getting her evening gowns for free and Mac the Knife is still legally paying for good information with a MacWEEK mug. Contact the Knife at (415) 882-7370 or MCI (MactheKnife).

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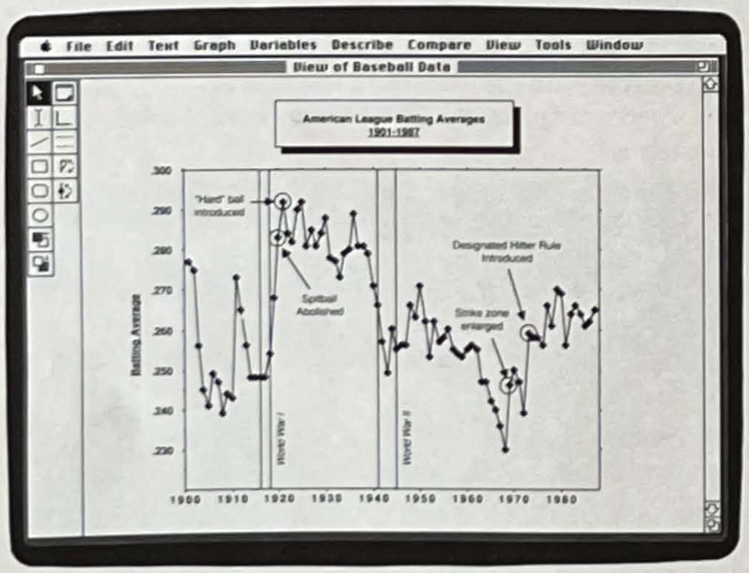

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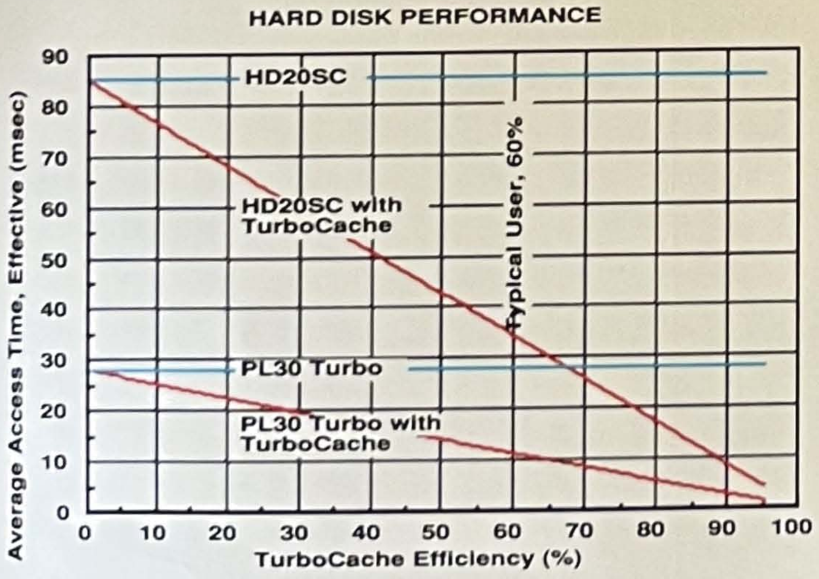

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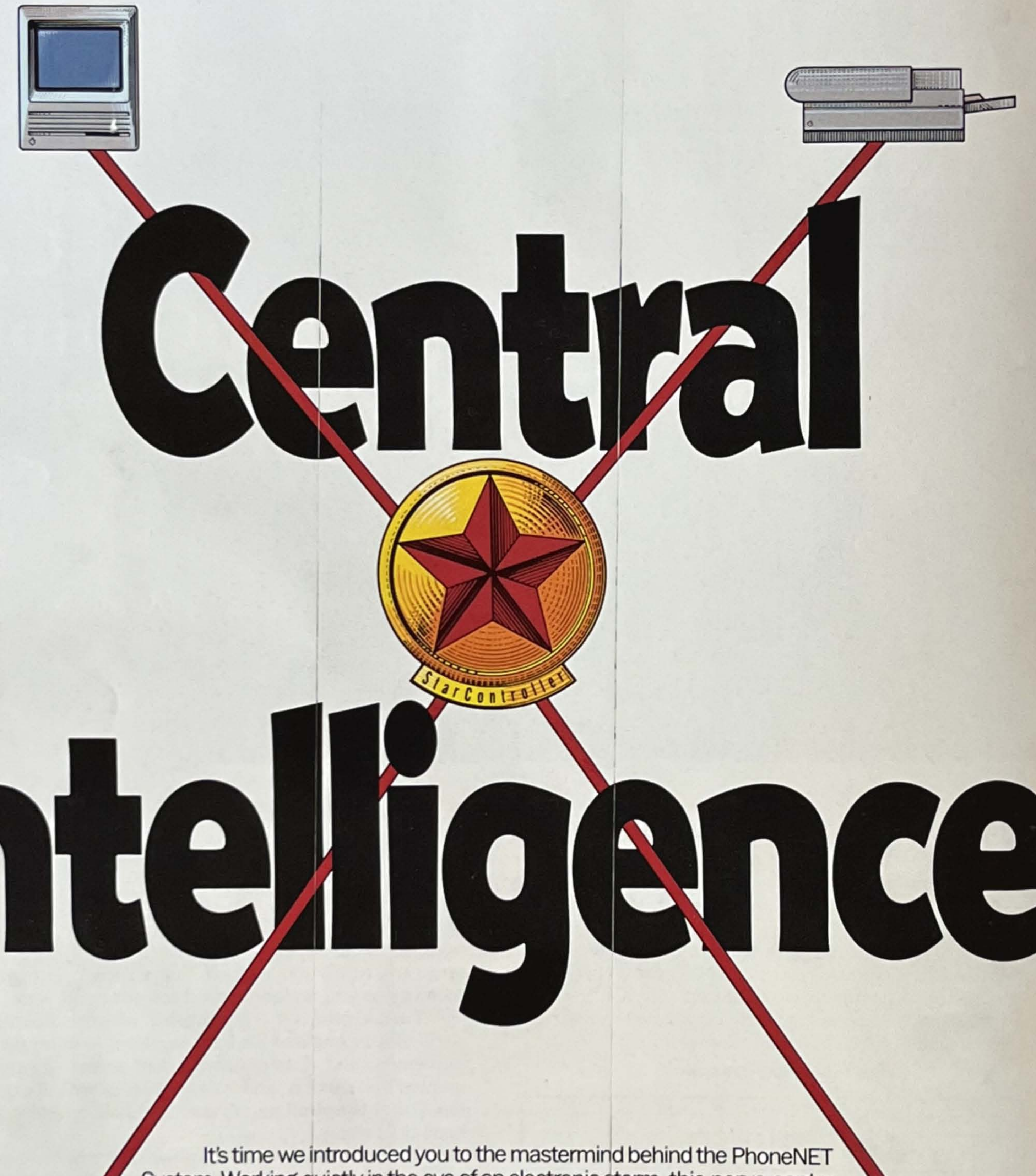

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